Textile World

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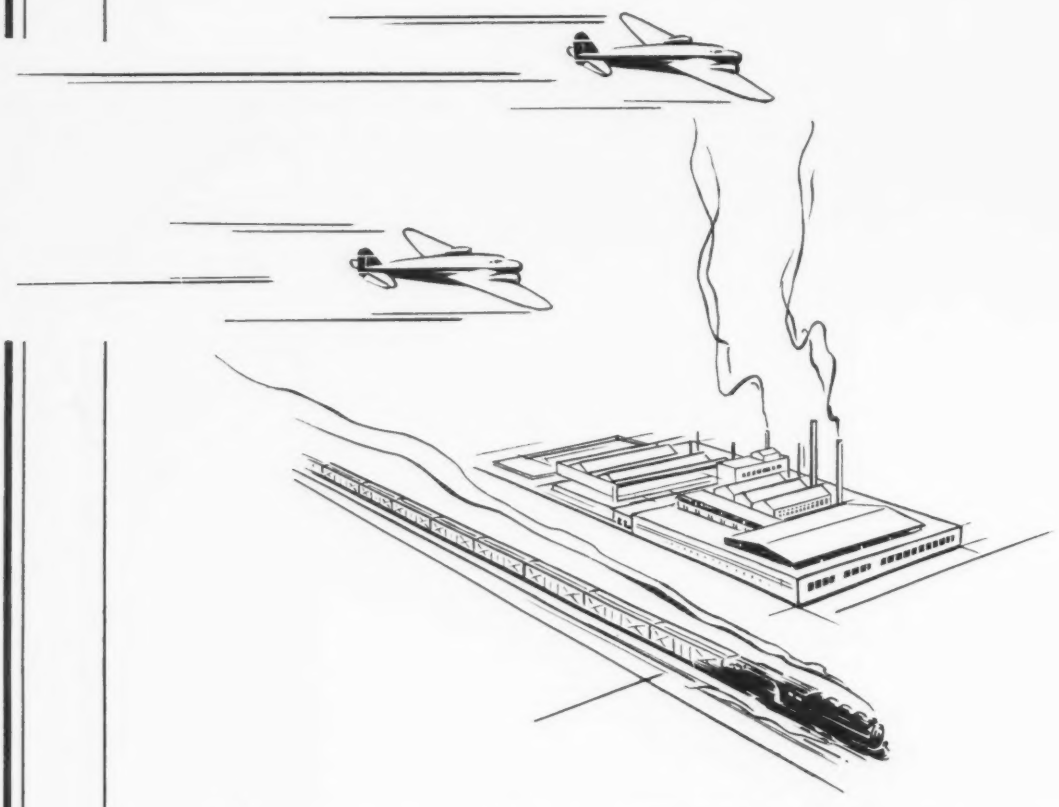
Four-in-One Issue



Money, too... Must *WORK FASTER* these Days

American Industry is producing at the fastest rate in its history. To maintain the pace, the working capital of every manufacturer must work faster, too. Waiting for funds tied-up in accounts receivable slows down the activities of many companies, just as surely as waiting for materials.

Today it is possible to extend to customers your regular credit terms of 30, 60 or 90 days and yet receive cash as your goods are shipped. This modern and accepted service keeps your working capital liquid, permits you to turn it more often. At the same time, Commercial Factors relieves you of the costly burdens of credit investigation, collections, credit losses and bookkeeping expense.

Put *your* money on a faster work schedule! Write today for complete information about Commercial Factoring and what it can do for *your* business.

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COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc. Established 1828

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Peierls, Buhler & Co., Inc. Established 1893

TWO PARK AVENUE, NEW YORK

SEVENTY-SEVEN FRANKLIN ST., BOSTON

TEXTILE WORLD. Vol. 93, No. 2. February, 1943. Published monthly by McGRAW-HILL PUBLISHING CO., INC., (Bragdon, Lord & Nagle Division). Publication Office, 99-129 North Broadway, Albany, N. Y. RETURN POSTAGE GUARANTEED. Editorial and Executive Offices, 330 West 42nd Street, New York, N. Y. Allow at least ten days for change of address.
Subscriptions: United States and Possessions, and Latin American Republics, $1.50 a year, $2.00 for two years, $3.00 for three years. Canada, $2.00 a year, $3.00 for two years, $4.00 for three years. Great Britain and British Possessions 12 shillings for one year, 27 shillings for three years. All other Countries $2.00 for one year, $4.50 for three years. Entered as second-class matter August 25, 1936, at Post Office, Albany, N. Y., under the act of March 3, 1879. Printed in U. S. A. Twenty-five cents per copy.

ECHNOLOGY DEPT:

One Mill's Decision on "Low Cost" Repairs

[redacted] Mills
Office of the Superintendent

MEMO January 1, 1943

Mr. [redacted] Supply Room

From this date you will order all repair parts for any of our machines from the manufacturer of the machines.

You will recall how you tried to save $34 on yarn beam bearings for a hundred looms and that we had to throw them away because the makers did not have the information to avoid interferences on our looms.

The loss was five times the expected saving without counting all the trouble in the weave room and our lost production.

We have checked up and find there have been many similar losses.

Under our war schedule our looms must be kept running—and at the lowest cost for repairs.

[redacted] Supt.

DRAPER CORPORATION

Hopedale Massachusetts

Atlanta Georgia Spartanburg S C

Let's get Tough!

O.W.I. PHOTO

Tough (tŭf)—having the quality of flexibility without brittleness; yielding to force without breaking; capable of resisting great strain,

as in ➡ TUFFER CARD CLOTHING

Yes, the call is for quality—in our men and in our products. The exclusive patented Tufferizing Process is your guarantee of quality Card Clothing. It cuts the wire even in length and free from burrs. It forms them with accurate, square crowns. It spaces them evenly and parallel in the famous Tuffer foundation.

The tougher the carding
—the more you need TUFFER

HOWARD BROS. MFG. CO

WORCESTER, MASS.

Southern Plants . . . Atlanta, Ga., Gastonia, N. C.
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TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and S... Cards • Napper Clothing, Brush Clothing, Strickles, Emery Filler... Top Flats Recovered and extra sets loaned at all plants. Lickerins a... Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts R... wired at Southern Plant • Midgley Patented, and Howard's Spec... Hand Stripping Cards • Inserted Eye and Regular Wire Heddl...

Neglect a Motor AND YOU Sabotage a Motor!

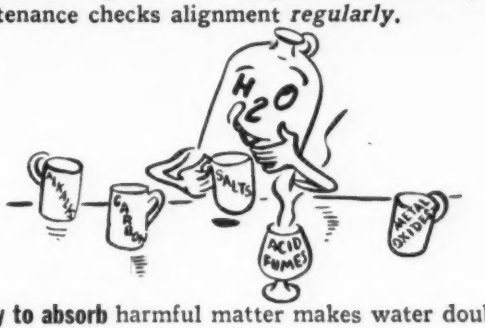
WHOSE MOTORS LAST LONGEST MAY HAVE A LOT TO DO WITH WHO WINS THIS WAR!

AS ONE of the world's leading builders of electric motors, Allis-Chalmers takes its hat off to the men of maintenance who are working day and night to keep America's motors *rolling!*

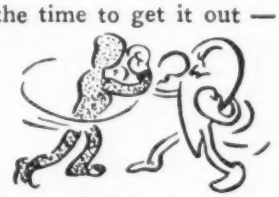
Like an overloaded horse, a motor worked too far beyond its horsepower capacity is sure to break down. So while maintenance men know that we've got to get maximum protection out of every motor to win this production war ... they also know that a close eye must be kept on every motor's overload protection. New fuses and heater coils are a whole lot cheaper than new motors!

The oil film protecting a motor's bearings often is no thicker than the wall of a soap bubble. And if pressure on it becomes too great, the film can fail just as suddenly and *completely!* To protect bearings, maintenance must first protect the *oil film* ... by guarding against excessive pressures from misalignment.

Spur gears constantly try to push apart, foundations are apt to settle, floor loading can be too heavy ... all threatening to disturb alignment. Misalignment sometimes gives a warning before causing damage. **But to play safe,** maintenance checks alignment *regularly.*



Ability to absorb harmful matter makes water doubly dangerous. Evaporated moisture is pure water when it first condenses in a motor — isn't yet an active destructive agent. That's the time to get it out — *fast!*



Dust fights lubrication. Once inside bearings, it can be as harmful as sandpaper to highly polished surfaces. To keep dust out, oil filler caps must be kept closed — dust seals and gaskets replaced when worn.

Is Allis-Chalmers' new maintenance handbook helping maintenance do its big new wartime job in *your* plant? It's the latest and last word on the subject, easily understood, abundantly illustrated (with dozens of sketches such as above). Send in today for *your* free copy to ALLIS-CHALMERS MFG. CO., MILWAUKEE, WIS.

A 1554

ALLIS-CHALMERS

WE WORK FOR VICTORY — WE PLAN FOR PEACE

"Over the Top"

Comments by Henry G. Lord

How well we recall that phrase in connection with the last war! It marked the climax of the long period of preparation and waiting behind the front lines. The fight was on!

The front cover of the Textile World Annual of 1918—twenty-five years ago—was designed with that thought in mind—the boys going over the top and in the background were the mills keeping them supplied with clothing and cover of which every American soldier had adequate equipment.

Note that it was the infantry soldier who was chosen as typical of the Battle of France. Air power was in its infancy and the first crude tanks developed by the British did not make their appearance until the latter part of the war. Sea power was just as important then as it is now. But today, although the infantry soldier and the sailor are still the backbone of the armed forces, the more spectacular development of air power and mechanized equipment brings the airplane and the tank into the foreground of our war thinking.

These changes on the fighting front have required equally radical adjustments in the textile mills supplying all the branches of our armed forces. Those outside the industry have little conception of its marvelous accomplishments, not only by stepping up its production to an all-time high record, but by the conversion of machinery to new uses and the development of new processes to meet new needs. And all of this in face of the conversion of the major part of the textile machinery plants to the building of war munitions.

Within a few weeks I have talked, at different times, to four young men who had recently returned from overseas; one, a young officer who had participated in the Egyptian campaign; another, the son of a close friend who had been sent back from Guadalcanal severely wounded; another, one of our own McGraw-Hill boys who had recently come back from Iceland, and the fourth was a young flier who had been in the Aleutian Islands. Could anything bring closer home to one the far-flung scope of this global war?

And every one of those boys had the right sort of equipment for the job that he had been assigned to do. I asked each one.

We hear of the lack of many things which are sorely needed for the war effort, but we hear no complaint about the job the textile industry has done, is doing and will continue to do, to meet every demand that is made upon it in these many varied new fields of war activity.

Surely every textile mill man and woman may justly take pride in the way our industry is "Going Over The Top."

HENRY G. LORD, *Vice-President of McGraw-Hill Publishing Co. and Founder of Textile World*

THE LOOM OIL THAT *Didn't* LOSE ITS BEARINGS

SUN LUBRICANT

"stayed on bearings longer ... saved 10%...at textile mill"

Lubrication of loom bearings is a mighty important job. It can determine the life of equipment that is hard if not impossible to replace...it also can speed or retard production.

No wonder this large textile mill was so anxious to find the best possible lubricant for its looms. Even though its regular loom lubricant was giving fair results, a Sun Doctor of Industry — a textile mill lubrication expert — showed the way to better lubrication. He recommended Sun Circo Heavy Medium T-2 Oil. The change was made with these results:

OIL MORE TACKY ... STAYS ON BEARINGS LONGER ... DOES NOT DRIP OFF ON FLOOR OR CLOTH ... GIVES ADEQUATE BEARING LUBRICATION AT ALL TIMES ... SAVED 10% ON LUBRICANT COST

Throughout the textile industry Sun Oil Company Engineers and Sun Lubricants are helping in ways like this to speed production and save wear and tear on vital equipment. They stand ready ... willing and able to help you in your plant. Call on them today. Write

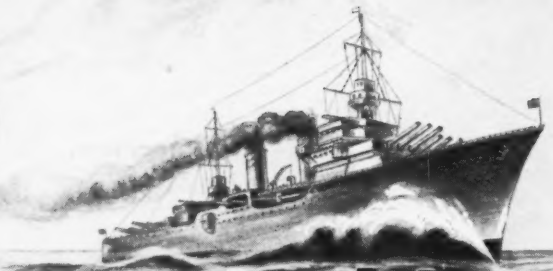
SUN OIL COMPANY • Philadelphia

SUNOCO

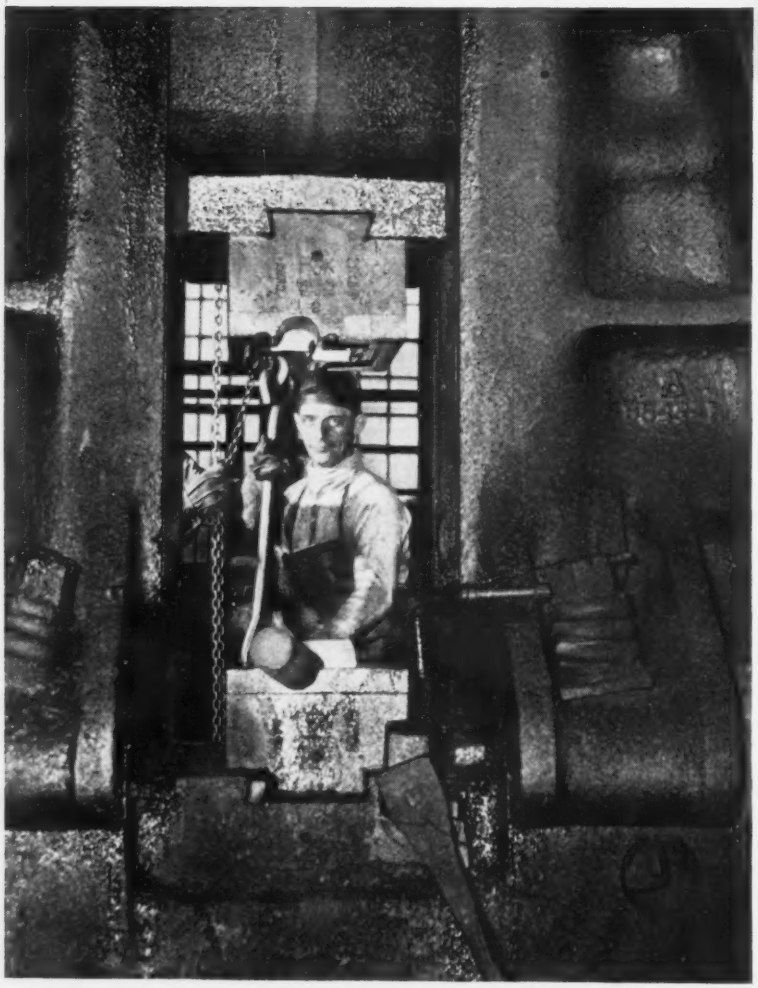
SUN PETROLEUM PRODUCTS

HELPING INDUSTRY HELP AMERICA

WHITIN'S ORDERS ARE *Full Speed Ahead!*



WAR WORK FIRST



The worker peering at you through this large drop hammer is only one of hundreds of Whitin employees now devoting their entire time and skill to the production of vital war equipment. He is forging crankshafts for the steam engines which we are building for the Maritime Commission.

Uncle Sam has asked for our help and we are glad that we have the organization and the tools to make the wide variety of war materials which he has requested. It means longer hours of exacting work under constant pressure. But Whitin's skilled workers have taken on the job gladly. They know it must be done.

Mill men have taken on a big job too. The tremendous yardage of war textiles flowing from mills all over the country is not only a tribute to the manufacturing ability of the industry but, we think, to the quality of its machinery.

Conservation of critical materials severely restricts the construction of new machinery. For that reason we take increased satisfaction in the knowledge that our machines are well built — that they are well adapted to produce at the rapid and continuous pace demanded by mills today. We are still able to furnish replacement parts in order to keep those machines at peak performance under these severe conditions.

Although we are up to our ears in war work, we have not set aside our responsibility to the Textile Industry, and our research and development departments continue to plan for better machinery after the war.

WHITIN MACHINE WORKS

WHITINSVILLE, MASS., U. S. A.

CHARLOTTE, N. C. ATLANTA, GA.

NOTHING LIKE IT FOR TOUGH V DRIVES!

The New GOODYEAR STEEL CABLE V-BELT

tackles forbidden fields on "belt eater" drives

SCORE another first for Goodyear—a revolutionary improvement in V-belt construction that obsoletes previous conceptions of V-drive design limitations.

The higher power capacity of steel cables now makes it possible to employ Multi-V drives where engineering limitations formerly denied their use. You can now pull heavier loads or get longer life on your present drives. It makes it practical for you to go to slower speeds or design a more compact drive, often eliminating outboard bearings.

In addition practically zero stretch means a new absolute minimum in adjustment and maintenance shutdowns. This freedom from stretch insures truly uniform performance from every belt in the drive. Once matched, always matched—there can be no loafers. This means far longer belt life.

Proved In Action

An endless steel cable replaces conventional cotton cord as the load carrying member in this remarkable new V-belt recently perfected by Goodyear after years of experimental work. In checking hundreds of thousands of drives for E-C Cotton Cord V-Belts the G.T.M.—Goodyear Technical Man—found many drives incapable of being handled by conventional belts. Many of these drives now may enjoy wire V-belt advantages.

On fan and pump drives of U. S. Army tanks and combat cars where ordinary V-belts "burn out" in a few hours, the new Goodyear Endless Steel Cable V-Belt takes the grueling punishment with a margin of safety. In industry, handling "belt eater" drives, it is proved that this new belt is far superior to any belt ever designed.

Goodyear Steel Cable V-Belts are now available to war industries holding top priority. Present emergency naturally limits the quantity and type, but if you have a troublesome drive, consult the G.T.M. or write the complete story to Goodyear, Akron, Ohio, for information.

E-C Cord—T. M. The Goodyear Tire & Rubber Company

HERE'S DEMOCRACY—AT WORK!

YES. We are proud of it—the coveted Army-Navy "E."

As it flies there under the symbol of democracy—those familiar stars and stripes—it does more, much more, than challenge us to outstrip yesterday's feats.

It is the signal flag of democracy *at work.*

For it is one thing to promise deliveries on vital chemicals to the services. Another to draw up production schedules. And yet another to deliver the goods.

That accomplishment belongs to the workers in our plants. That accomplishment is the living proof of democracy *at work.*

It is solid testimony to the good will, cooperation, and loyalty existing here between the workers, the supervisors and the management of Calco.

And it is our tribute to those of us who have left temporarily to serve in the armed forces.

CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
BOUND BROOK, NEW JERSEY

Calco

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BALL BEARINGS ARE VITAL TO THE WAR

Apply them right — for best performance

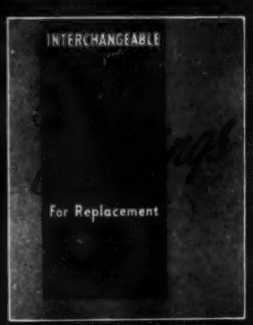
HERE'S HELP FOR DESIGNERS

Maintain them correctly for maximum life

HERE'S HELP!

. . . and if you must replace

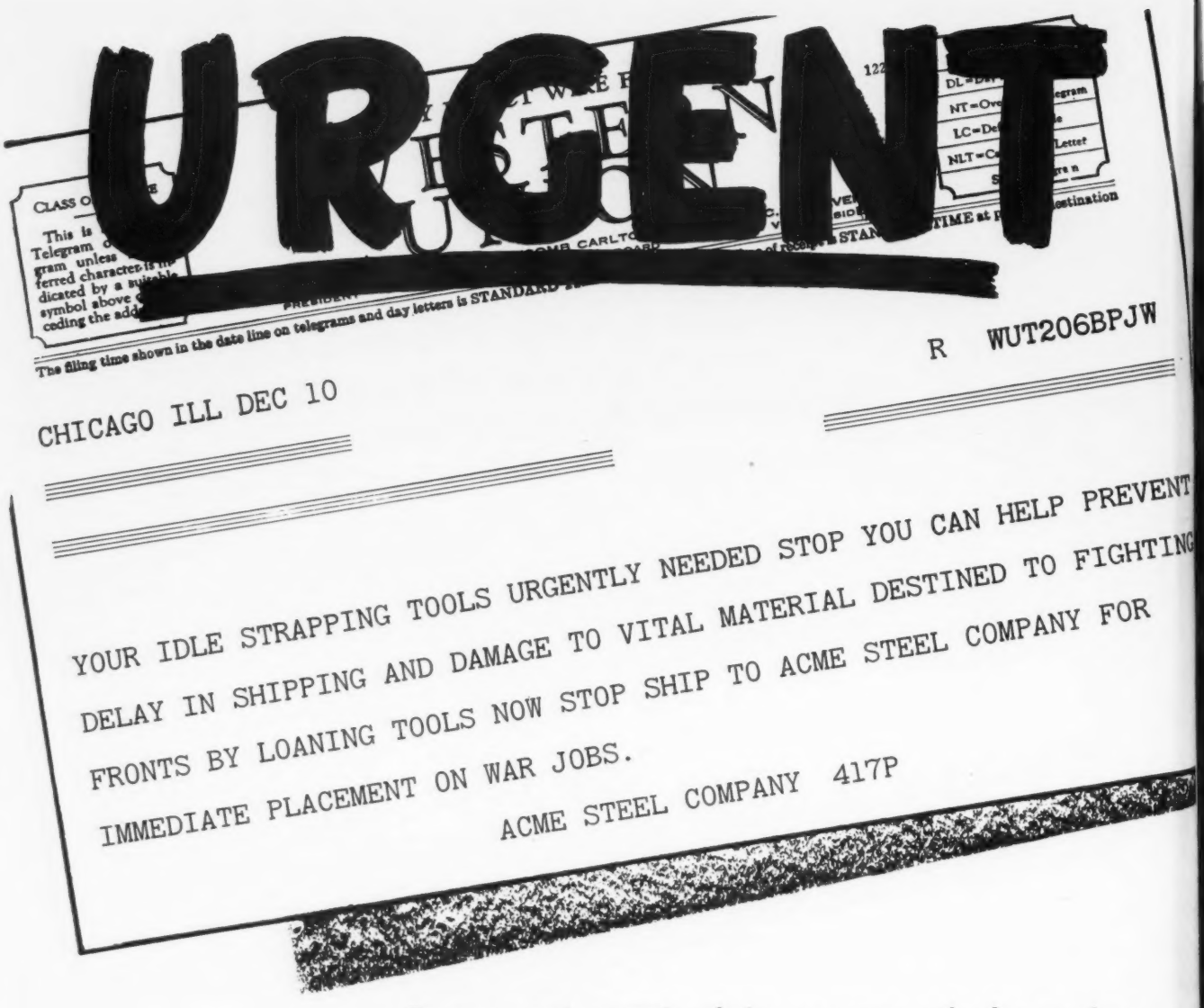
HERE'S HELP!



Keep them rolling! In addition to these helpful technical booklets and manuals, New Departure's staff of application and field service engineers are always at your service. Address New Departure Division General Motors Corp., Bristol, Connecticut. Detroit, Chicago, San Francisco, Washington.

NEW DEPARTURE BALL BEARINGS

3113


URGENT
The filing time shown in the date line on telegrams and day letters is STANDARD
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CHICAGO ILL DEC 10
YOUR IDLE STRAPPING TOOLS URGENTLY NEEDED STOP YOU CAN HELP PREVENT
DELAY IN SHIPPING AND DAMAGE TO VITAL MATERIAL DESTINED TO FIGHTING
FRONTS BY LOANING TOOLS NOW STOP SHIP TO ACME STEEL COMPANY FOR
IMMEDIATE PLACEMENT ON WAR JOBS.
ACME STEEL COMPANY 417P

Because steel strapping helps to assure safe, damage-free arrival to all types of shipments, from crated fighter planes to cartons of canned foods . . . demand for the speedy Acme strap-applying tools has taxed our capacity to the limit . . . . . all strapping tools are made from critical materials.

How to draft your idle strapping tools for war work

Just send your unemployed Acme strap-applying equipment to Acme Steel Company. These tools will be placed with the armed services and in war plants. On strapping tools made by others than Acme, write the manufacturers.

Tools loaned will be replaced

The Acme tools which you loan to the war effort will be replaced whenever you need them. Or if you prefer, a cash credit, based on their present return value, is readily available. Will you please check up today . . . then let us know how many Acme strap-applying tools you can spare and ship them direct to us.

ACME *Steelstrap* PROCESS

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Atlanta • Baltimore • Boston • Detroit • Indianapolis • Los Angeles • Milwaukee • New Orleans • New York • Philadelphia • Pittsburgh
Portland, Ore. • St. Louis • St. Paul • San Francisco • Seattle • also representatives in other principal cities
ACME STEEL COMPANY OF CANADA, LTD., Montreal, Toronto, Winnipeg, Vancouver

To the Eagle's Brood, Standard Yarns Contribute Wear-Life for War Life ★ ★

Wear-life and comfort for foot and body are as essential to civilian as to military needs. Top this with the imperative of production against the clock-beat of Time and you see why the clean staple, uniform twist and free-running characteristics of Standard Yarns contribute so much to uninterrupted output.

Standard Yarns are knotless by the mile—knotless, clean, uniform, spun to travel freely through latch needle or guide and put quality on a quantity basis.

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DURENE

SELO PREEMO

COMBED SAKS

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SPINNERS MERCERIZERS S-C-T DYERS BLEACHERS

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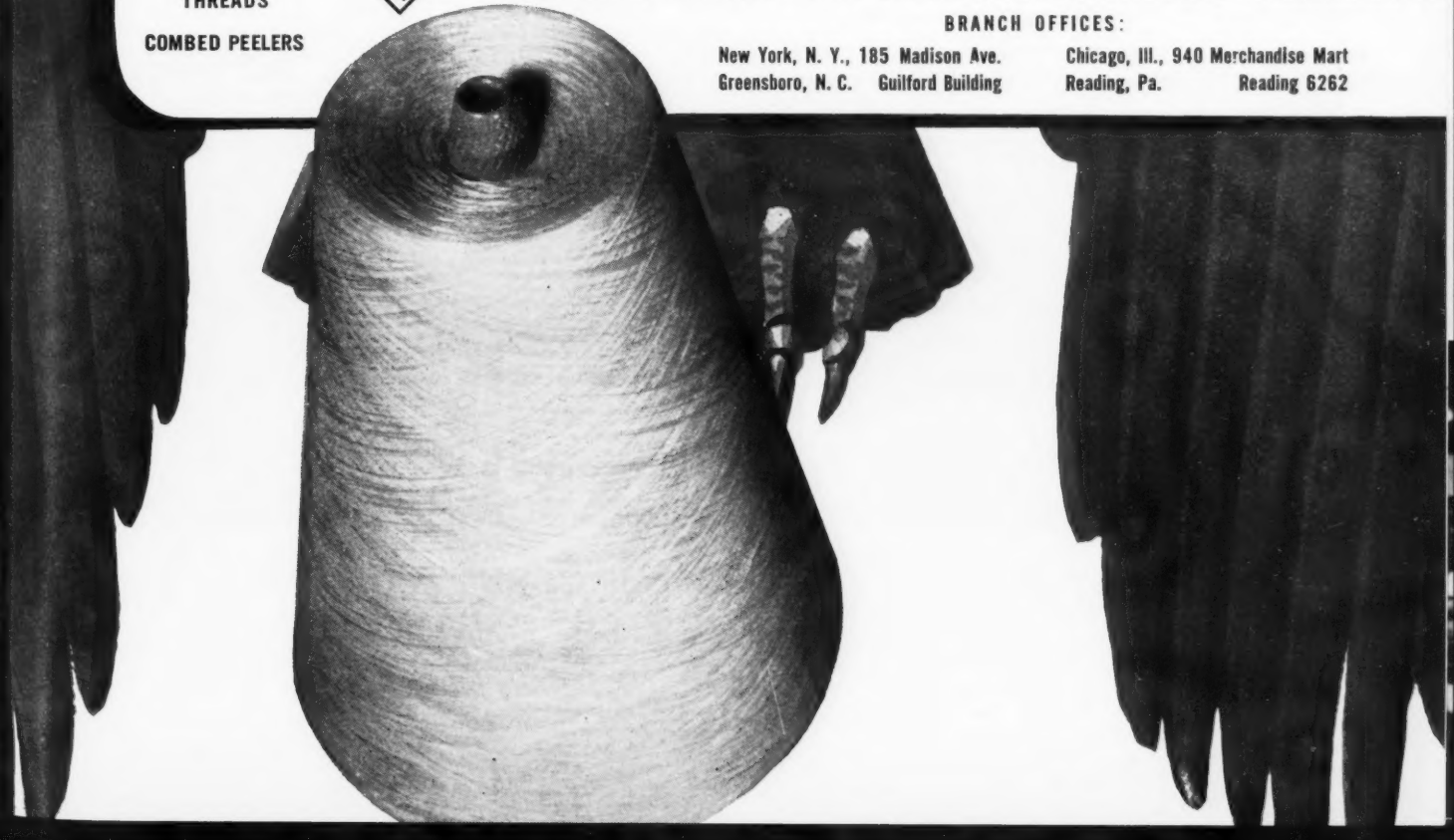
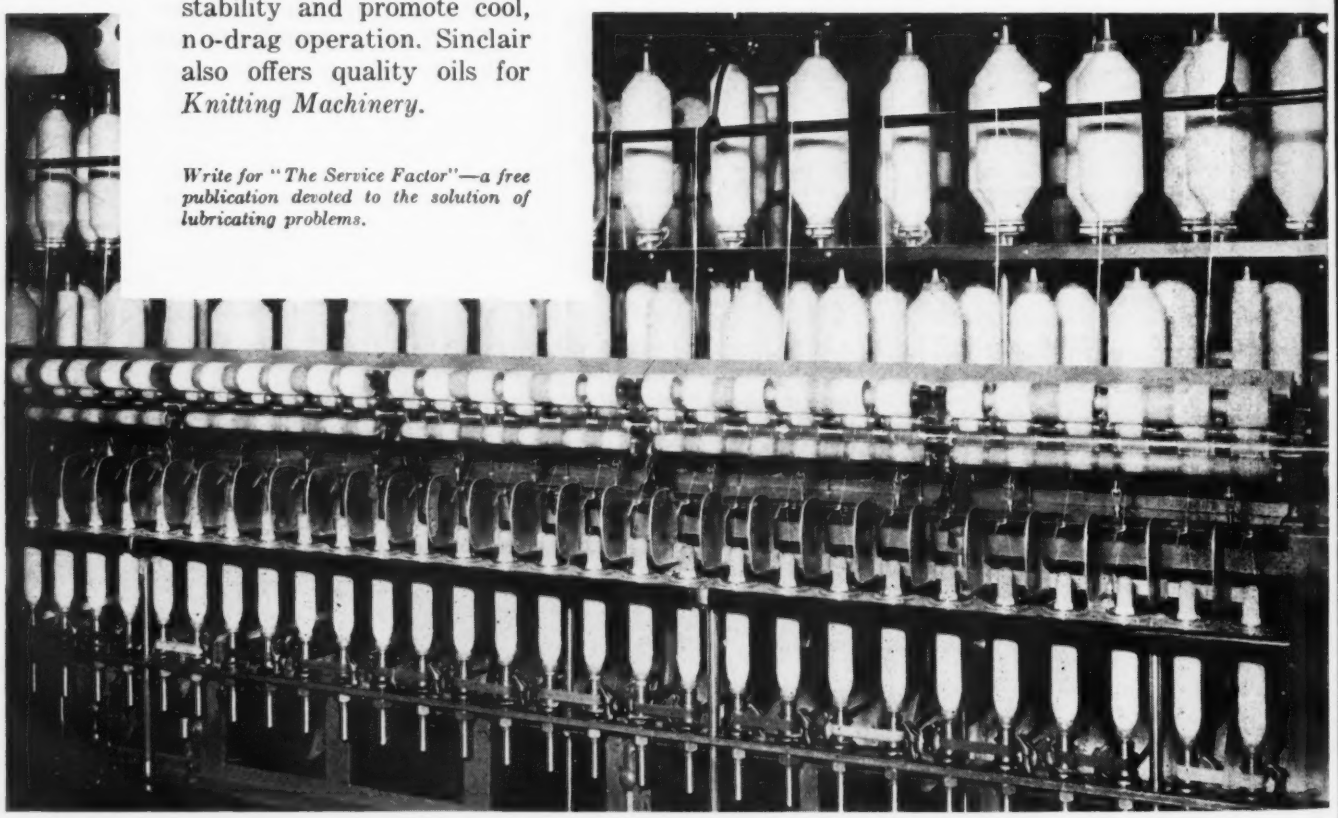


BREAK THROUGH leads to success—*breakdown*, to defeat. To avoid breakdown and delay in *TEXTILE MILL* operation use . . .

. . . SINCLAIR LILY WHITE OILS specially developed for *correct* spindle lubrication under all loads, speeds, and continuous operation. These oils have high stability and promote cool, no-drag operation. Sinclair also offers quality oils for *Knitting Machinery*.

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

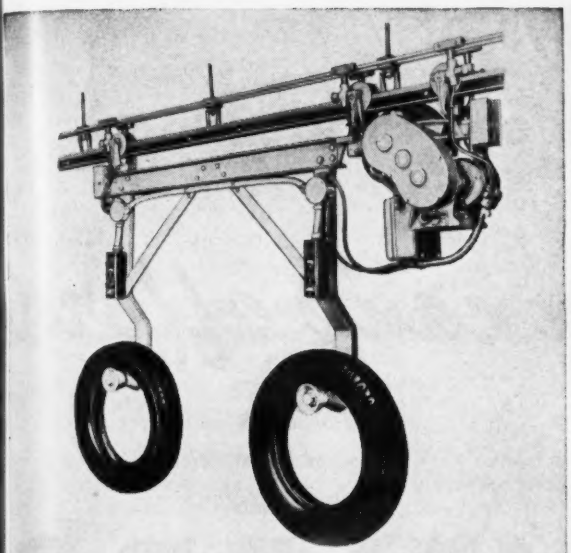


SINCLAIR TEXTILE LUBRICANTS

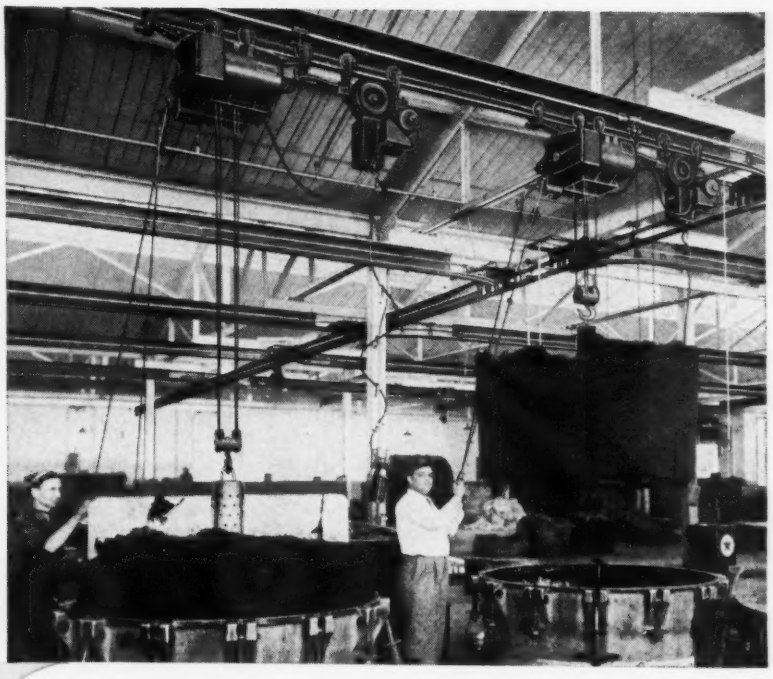
FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

SINCLAIR REFINING COMPANY (Inc.)

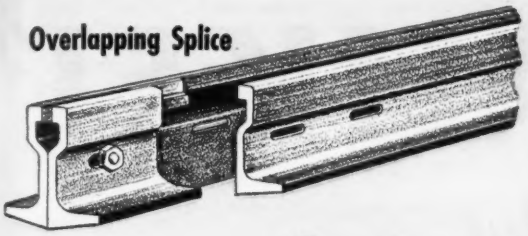
2540 West Cermak Road, Chicago · 10 West 51st Street, New York City · Rialto Bldg., Kansas City · 573 West Peachtree Street, Atlanta · Fair Building, Ft. Worth



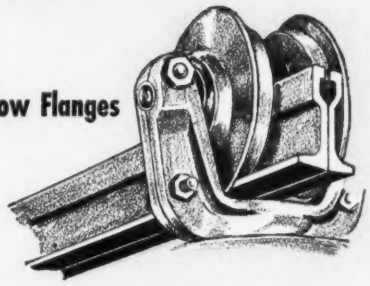
Flexible application of standard parts results in tailor-made systems without extra cost.



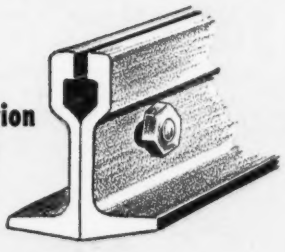
Overlapping Splice

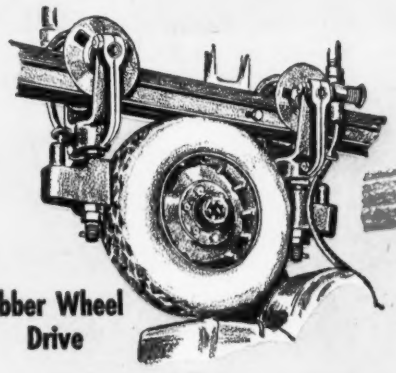


Narrow Flanges



Twin Section Track





Rubber Wheel Drive

BETTER

PRODUCTION NOW!

IMPROVED POSITION THEN!

NOW, when the need is great, you can better your production of war material with American MonoRail equipment in many processes where handling impedes your war effort.

Later, after Victory, you will have essential equipment available for changes in product or process. American MonoRail, because of its extreme flexibility, offers such versatile application without costly adjustment or lengthy engineering. American MonoRail standard parts fit quickly into complete systems to solve a wide variety of handling problems. Prepare now for changes then—equip now for speed up toward Victory!! Let our engineers show you results obtained in hundreds of successful installations.

WRITE FOR Blue Book illustrating hundreds of MonoRail installations.

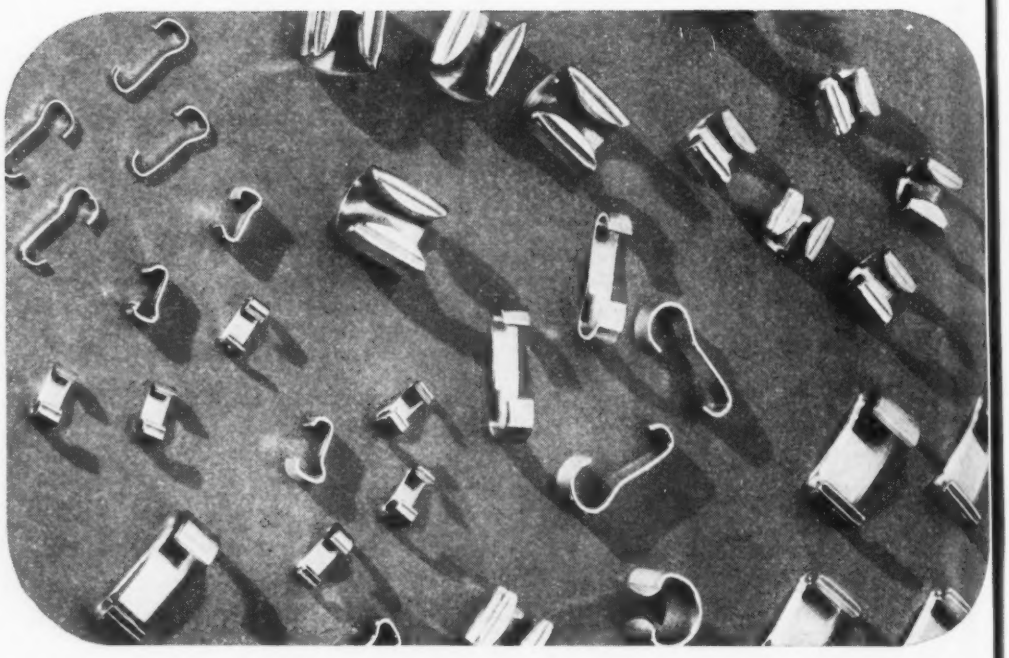
THE AMERICAN MONORAIL CO.

13108 Athens Avenue ★ Cleveland, Ohio

In These Days of 144 hrs.-a-Week Production

You can't afford to

"ALL TRAVELERS ARE ALIKE!"



NOTE

If you want "the same as you've always used" in Ring Travelers — you can get it from "U. S." If you want helpful advice on improved Traveler design or service — "U. S." can give you that, too.

Sold under these trade names

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
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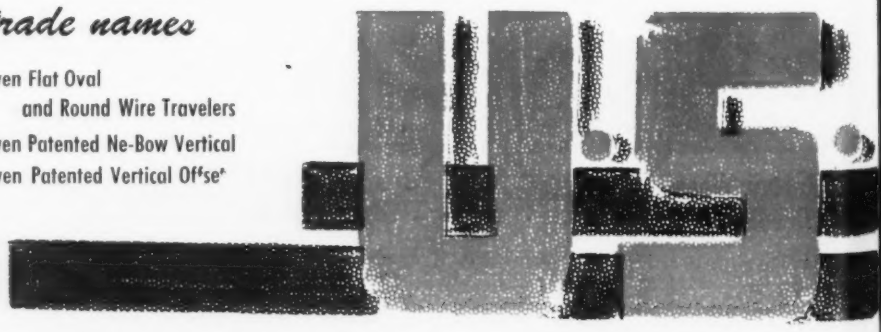
Bowen Patented Vertical Offset



No. 6 OF A SERIES
BASED ON INTERVIEWS WITH TEXTILE MEN who want more production

...to keep thinking:

There are still a lot of textile men who say all Ring Travelers are alike. That's not carelessness. Maybe they've had the same troubles with all brands of Travelers. If so, that's just too bad. Maybe they're using Travelers that give perfect performance . . . so they never had to change! In that case, congratulations. We wouldn't want them to change for the world!

But if you're a mill man who thinks maybe he can get better performance from Ring Travelers, we wish you'd let us show you something about U. S. Ring Travelers.

We wish you'd let us show you that when we talk about specific Traveler designs, we mean designs based on every single factor that influences Traveler performance . . . rings, weights, twist, stock, spindle speeds, heat, lubrication, etc., etc.

We'd like to show you something about the scientific metal-hardness control in the production of U. S. Ring Travelers, bronze or steel.

We'd like to show you why you never get a "spotty" lot of U. S. Ring Travelers. If you use a certain count of U. S. Traveler and get so many hours of production, and you order another batch of the same, you are absolutely certain to get the same uniform grade of U. S. Travelers for that particular work.

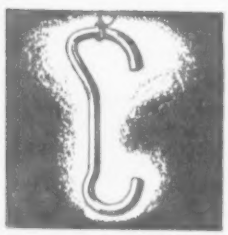
We're not the only people in the world who make good Ring Travelers. **But the prestige and position held by U. S. Ring Travelers was gotten the hard way. We repeat, if you're getting good service from the brand of travelers you now use, congratulations.**

But if you think that you can get better Traveler Service . . . we'd like to send over a man to your plant, who really knows Ring Travelers, and the things that influence their performance.

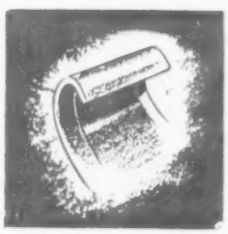
He won't waste your time. He won't recommend you using a Traveler just "because so-and-so uses it." But he will recommend a specific type of U. S. Ring Traveler that will best fit your needs. If necessary, we will design it, and produce it in the exact hardness of metal and shape best suited to your requirements. Make us prove these statements — you will profit by them!

BUY WAR BONDS
For Victory Today
For Prosperity Tomorrow

U. S. RING TRAVELER COMPANY
PROVIDENCE, AMOS M. BOWEN, Pres. and Treas. **RHODE ISLAND**

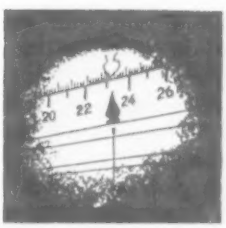


PERFECT BALANCE
Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.



THE BEVEL EDGE
Great pioneering "U.S." contribution to smooth spinning, twisting.
Eliminating angular edges, gives uniformity of tension, more even yarn, less "fly."

THE NE-BOW
Prevents yarn ends flying out, provides ample headroom for threading—prevents binding on ring. Note "bend inward" at top of horn.



HEAT CONTROL
for better metal—dominates "U.S." production! Carburizing and tempering ovens are electrically controlled through pyrometers — for better performance.

RING TRAVELERS

A Traveler for Every Fibre

THE TRAVELERS THAT KEEP GOING!

U.S. RING TRAVELER CO.

RAYON REPORTS

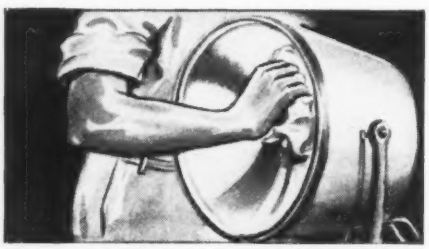
Presented monthly by American Viscose Corporation, New York, N. Y. FEBRUARY, 1943

NEW PRODUCT! "Varied Staple" is a new product added to our "Fibro" line. It was designed for use by the worsted trade. Unlike ordinary staple fiber, this staple is cut in varied lengths, ranging from 3½" to 6". Worsted manufacturers have found that this fiber gives a staple diagram with a sloping shoulder similar to the fiber length range of any desired commercial wool, gives the distinct advantage of better blending. "Varied Staple" is sold at no extra premium. If you are a worsted manufacturer, write for further information.

S-T-R-E-T-C-H—We can now announce the development of a new synthetic vinylite resin yarn with elastic properties! This yarn possesses many of the characteristics of rubber, without many of rubber's disadvantages. It has better resistance to sunlight, tropical heat and humidity, and is not at all affected by body acids. It has a property of "lazy stretch" which is said to make it more comfortable when worn in constricting apparel. At present, the entire output of this new yarn is required for military equipment. It has been used, however, for making a number of articles experimentally and these products may be manufactured on a commercial basis when supplies of the new yarn become available. Articles in which the yarn can replace rubber include elastic webbing, tapes and cords, women's girdles and brassieres, surgical stockings, knee braces, supporters and suspenders. You'll hear a lot more about it.

CONSERVATION NOTE—Customers are requested to return cone centers, cone cases, beams for acetate, and beams for tire yarns. Return of such necessities in good condition makes it possiole for us to give you better service in these times.

MONEY SAVER! Manufacturers are finding that "Avisco" saves them money. Kilburn Mill of New Bedford, a fine yarns spinning mill that specializes in strong spun rayon yarns of no blend, has been interested in "Avisco" for several years because they found that there was a ready market for a strong spun yarn 2-plied and used in decorative stripes in the worsted industry. The yarn varies from 50/2s to 70/2s, which are counts for which "Avisco" is especially intended. The results obtained in the carding and spinning from "Avisco" showed that their production was greater, their waste less, and their yarns better, so that, all in all, the results more than offset the one cent a pound premium which "Avisco" attains over "Fibro." Consequently, this mill went 100 per cent to "Avisco" for all counts, even the coarse.



EYE-BRIGHTENER—An increasing number of manufacturers of Army and Navy binoculars, range finders and other high-grade military and civilian optical equipment are using the special spun rayon and cotton wiping cloth we developed in conjunction with George Woods Sons of Philadelphia. Lens-grinding is particularly exacting work. Between grindings, lenses must be wiped clean. This new rayon-cotton cloth is particularly good for this purpose because it is soft and absorbent and relatively lint free, and also strong and durable.

RESEARCH WARRIORS—American Viscose Corporation now has a War Effort Sales Division. Its work will be to cooperate with research organizations of the Government and agencies of the armed forces in order to assist with the war program.

BUNDLES FOR THE AXIS

We were more than faintly surprised by the amount of scrap collected in our plants by the middle of November. Over 8,000,000 pounds of metals to help bust the Axis on the snoot. The totals of metals and other materials are as follows:

	Pounds
Aluminum	71,205
Copper and copper alloy scrap	335,081
Cast iron	1,000,872
Lead	1,226,149
Nickel and Nickel-bearing metals	27,433
Miscellaneous yard steel	5,360,696
Paper	1,575,464
Scrap cloth rags	65,479
Rubber	38,250
Miscellaneous	89,790

And—the scrap round-up is still going on!

*Reg. U. S. Pat. Off.

Copr. 1943—American Viscose Corp.

4-PLY SERVICE . . .

Fiber research helps you get the right yarns; *fabric development* helps you design new fabrics; *The Textile Unit* helps you solve mill problems; and CROWN Tested gives you scientific performance facts on finished fabrics containing CROWN Rayon—are all part of our 4-PLY SERVICE. All are designed to help you make the best possible use of the available yarns and fibers. Make use of the 4-PLY SERVICE!

AMERICAN VISCOSE CORPORATION

Producers of CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.

Plants: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

SPECIALIST AND GENERAL PRACTITIONER IN ONE

Each one of our plants specializes to a considerable extent in dyeing yarn for a different purpose peculiar to its own territory. However, special knowledge gained in this way is pooled, so that each plant is in effect a "general practitioner" with broad experience.

Our Philadelphia plant is well known for the excellent job it does on cotton knitting yarns for polo shirts, sportswear, underwear, children's wear and other fabrics made on large circular machines. Fabrics of this type are illustrated herewith, also some of our facilities in Philadelphia for dyeing and winding yarns for all purposes.

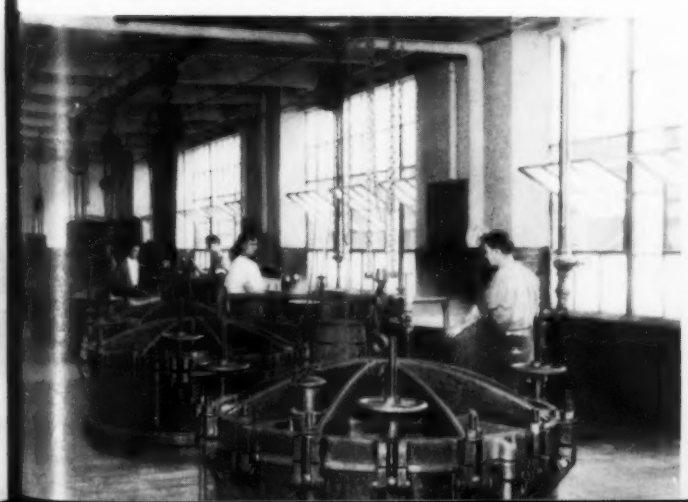
Whether your yarn dyed fabrics are for civilian or military use, Franklin Process specialists can probably help you.

FRANKLIN PROCESS
Yarn Dyers, Colored Yarns
Providence, Philadelphia, Greenville, Chattanooga • New York Rep., 40 Worth Street; Chicago Rep., 100 West Monroe Street.

Franklin Process

★LARGEST PACKAGE DYERS IN THE WORLD

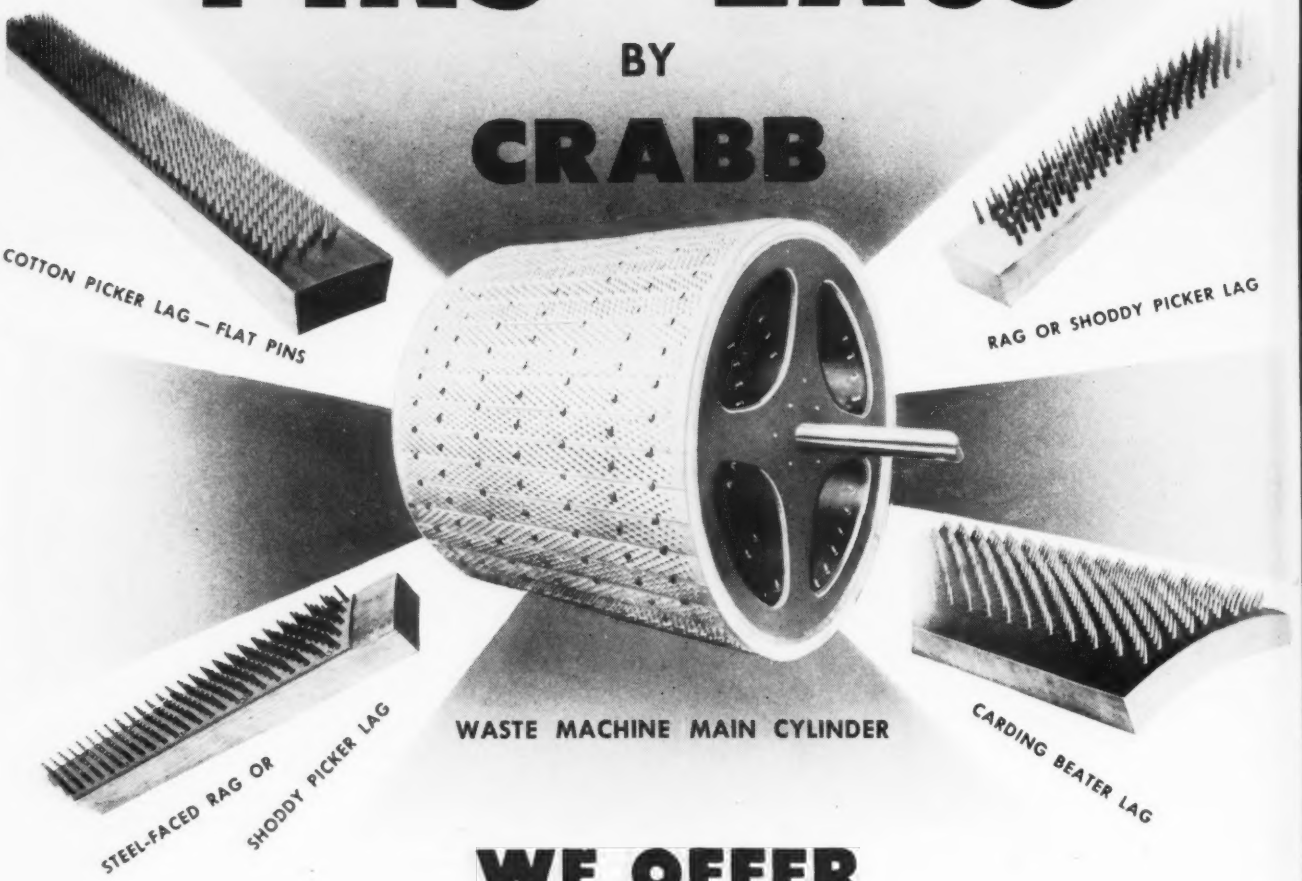
ECTION OF OUR PHILADELPHIA DYE HOUSE



CORNER OF OUR PHILADELPHIA WINDING ROOM

PINS *and* LAGS

BY CRABB


COTTON PICKER LAG — FLAT PINS
RAG OR SHODDY PICKER LAG
WASTE MACHINE MAIN CYLINDER
STEEL-FACED RAG OR SHODDY PICKER LAG
CARDING BEATER LAG

WE OFFER QUALITY

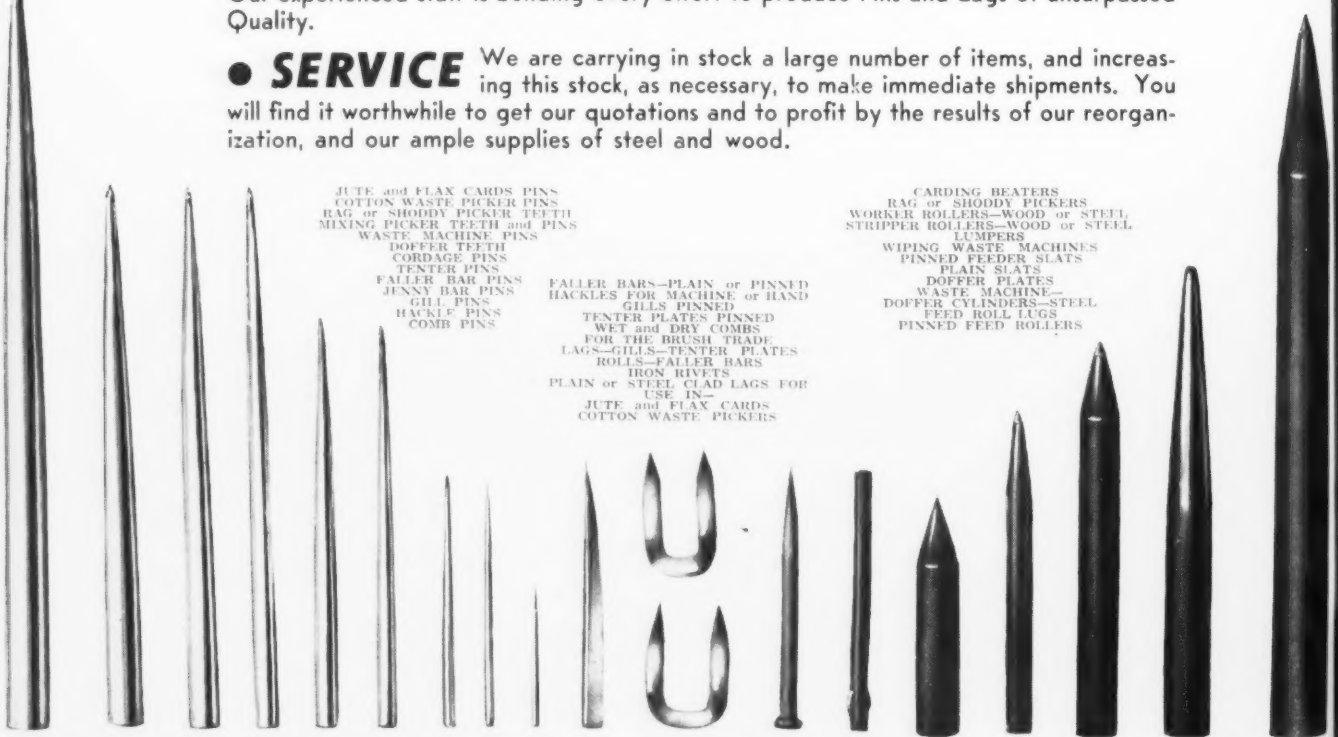
Our experienced staff is bending every effort to produce Pins and Lags of unsurpassed Quality.

• ***SERVICE*** We are carrying in stock a large number of items, and increasing this stock, as necessary, to make immediate shipments. You will find it worthwhile to get our quotations and to profit by the results of our reorganization, and our ample supplies of steel and wood.

JUTE and FLAX CARDS PINS
COTTON WASTE PICKER PINS
RAG or SHODDY PICKER TEETH
MIXING PICKER TEETH and PINS
WASTE MACHINE PINS
DOFFER TEETH
CORDAGE PINS
TENTER PINS
FALLER BAR PINS
JENNY BAR PINS
GILL PINS
HACKLE PINS
COMB PINS

FALLER BARS—PLAIN or PINNED
HACKLES FOR MACHINE or HAND
GILLS PINNED
TENTER PLATES PINNED
WET and DRY COMBS
FOR THE BRUSH TRADE
LAGS—GILLS—TENTER PLATES
ROLLS—FALLER BARS
IRON RIVETS
PLAIN or STEEL CLAD LAGS FOR USE IN—
JUTE and FLAX CARDS
COTTON WASTE PICKERS

CARDING BEATERS
RAG or SHODDY PICKERS
WORKER ROLLERS—WOOD or STEEL
STRIPPER ROLLERS—WOOD or STEEL
LUMPERS
WIPING WASTE MACHINES
PINNED FEEDER SLATS
PLAIN SLATS
DOFFER PLATES
WASTE MACHINE—
DOFFER CYLINDERS—STEEL
FEED ROLL LUGS
PINNED FEED ROLLERS



WILLIAM CRABB & CO. **301-3rd Ave., Newark, N. J.**

No other Synthetic Cot gives you all these advantages

1. **Good Coefficient of Friction**—Less eyebrowing than with other synthetic cots.
2. **Ready-glued**—Inner surface coated with water-soluble glue for quicker assembly.
3. **Resilience**—Nonthermoplastic, highly resistant to flattening; aids quick start-up.
4. **Durability**—Long life, resistance to grooving even under severe operating conditions.
5. **Solvent Resistance** — Unaffected by oil, water, dyes, or solvents used in textile mills.
6. **Uniformity**—Homogeneous composition assures uniform wear, equal life of every cot.
7. **Seamless**—No surface irregularities; no troublesome seams to open and shorten life.

Where operating conditions are unusually severe, Accotex Cots prove their exceptional wearing qualities. Moreover, you can rebuff these rubber-like synthetic cots several times for extra service. Because they are extremely tough, and solvent-resistant, Accotex Cots are recommended especially for use (1) on frames spinning coarse numbers, particularly frames equipped with revolving clearers; (2) on back line rolls of long draft roving and drawing frames; (3) on wet twisting equipment.

Before you choose heavy-duty cots, consider *all seven* advantages of Accotex Cots. You'll find these cots best for heavy-duty jobs. If you have a roll covering problem, be sure to consult your Armstrong representative. Or write direct to Armstrong Cork Company, Textile Products Section, 8302 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S ACCOTEX COTS

CORK COTS • ACCOTEX APRONS

A BOND OF INTEREST IS A STRONG TIE

Few BONDS hold people together so firmly as a common interest. It may be fishing or some other sport, books or the theatre—it is hard to break such a BOND. It is like the BOND between two ingredients with an affinity for each other. Such a BOND is that between the fabric and pigment in modern pigment-printing and pigment-dyeing with Aridye* Textile Colors. It is in sharp contrast with the kind of attachment obtained by a "glue."

How to Be Sure of this BOND

The firm BOND between the pigment and the fiber is an outstanding accomplishment of modern pigment-printing and pigment-dyeing. Users of Aridye Textile Coloring Materials know that this firm BOND results only when:

1. *Technically correct pigmented colors are used*
2. *The colors are properly applied to the fibers of the cloth*
3. *The colored fabric is then adequately cured.*

If these conditions are met, the resulting colored fabric, with the pigment firmly BONDED to the fabric fibers, will meet the standards for high quality merchandise. The selection of the right pigment, the exact form of the pigment, the method of dispersing, the tenacity of the binder and the proper curing of the fabric have all been determined by research in the Laboratories of Aridye Corporation and proven by actual production experience.

Aridye colors for pigment-dyeing are emulsions. The pigments are dispersed in a solution of synthetic resins into which water is emulsified. This emulsion remains stable; consequently there is no exhaustion of the bath, as all components are taken up together by the fabric in the same proportions.

Meet Industry's High Standards

Aridye colors, properly applied and adequately cured, meet or exceed the high standards of the textile industry for wash-fastness, light-fastness and scrub tests. Certain Aridye colors for pigment-printing or pigment-dyeing can be selected which will withstand *300 hours* in the fadeometer without noticeable letdown in shade. Comparative tests, covering Mildew Effectiveness, Resistance to Abrasion, Chlorine Retention, Air Porosity and Presence of Primary Irritating Substance, have been made by the United States Testing Company, Incorporated. Full copies of these reports will be sent on request.

Aridye Colors Are Available Now

Aridye pigmented emulsions are available *now*. For additional information about this method of printing and dyeing with fast pigments, write to Aridye Corporation, a Subsidiary of Interchemical Corporation, Fair Lawn, New Jersey.

*Reg. U. S. Pat. Off.

NOT ONE, NOT TWO, BUT

3

CONDITIONS GOVERN THE BOND BETWEEN FABRIC FIBER AND PIGMENT

1 Technically correct pigmented colors

2 Proper application to the fibers

3 Adequate curing of the fabric

NO SHORTCUT PROCEDURE CAN PRODUCE A SATISFACTORY BOND

Aridye

TEXTILE COLORING MATERIALS

ARIDYE CORPORATION • A Subsidiary of Interchemical Corporation • FAIR LAWN, NEW JERSEY • ROCK HILL, SOUTH CAROLINA • PROVIDENCE, RHODE ISLAN

HOW TO SOLVE
Operating Problems with Correct Lubrication
HIGHLY POLISHED SURFACES LIABLE TO CORROSION...WEAR
MUST SEAL OUT DUST ...PREVENT LEAKAGE

Prevent Corrosion & Pitting

AFTER YOU'VE DECIDED to use Gargoyle BRB Greases for ball bearings you can go back to getting out production and be assured *that* problem is solved.

These greases do not break down and form the deposits which lead to corrosion and pitting.

In fact, their reliable stability allows bearings to go through periods of a year or more without repacking.

In addition, these greases do not change in structure within wide temperature ranges.

Here are greases you can *depend* on! This has been proved in thousands of applications under operating conditions.

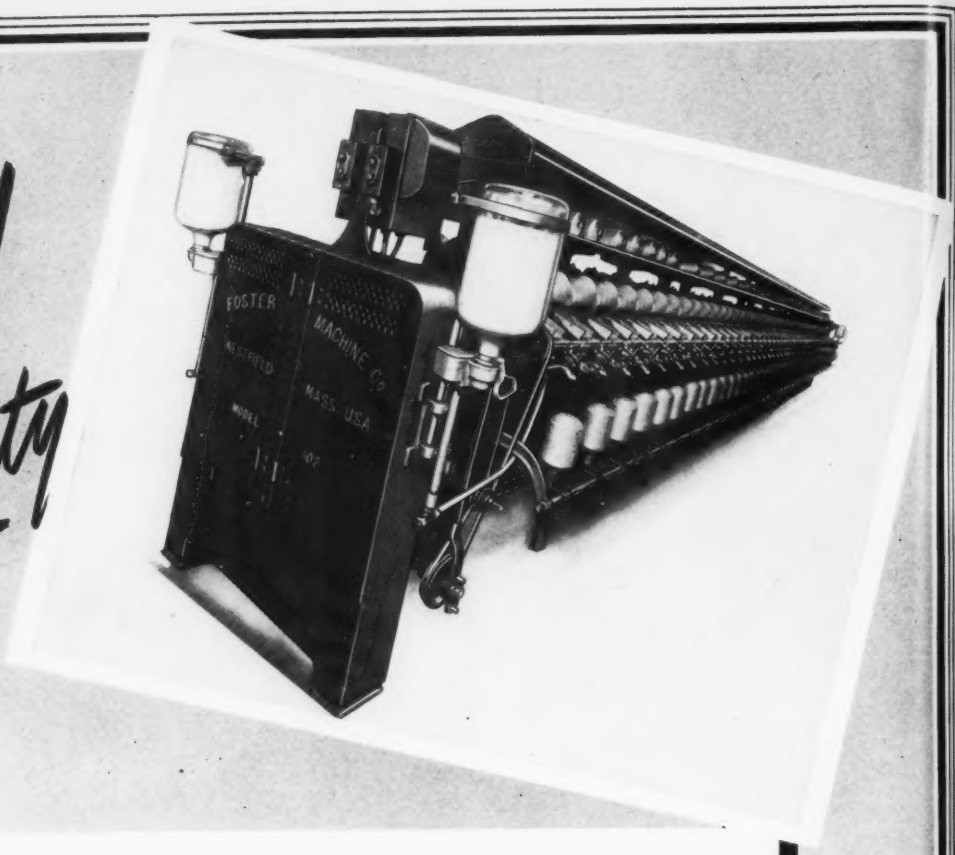
You've solved an important operating problem when you let the Socony-Vacuum man who calls on you specify Gargoyle BRB Greases for the ball bearings in your plant.

GARGOYLE Lubricants

SOCONY-VACUUM OIL COMPANY, INC. — Standard Oil of N. Y. Div. • White Star Div. • Lubrite Div. • Chicago Div. White Eagle Div. • Wadhams Div. • Southeastern Div. (Baltimore) • Magnolia Petroleum Co. • General Petroleum Corp.

CALL IN SOCONY-VACUUM

A 7-WAY Flexibility



Conversion requirements for war production have demonstrated the value of flexible equipment. Such equipment will be equally valuable when peace comes. The Foster Model 102 winder has a 7-WAY FLEXIBILITY as follows:

1. It will wind any kind and any count of staple yarn from fine combed cotton or rayon for tropical fabrics to heavy wool yarns for arctic cloths.
2. It will wind a straight base cone for warping or a convex base cone for knitting with a simple adjustment.
3. It will produce any angle of wind from 9° to 18°. Important if you radically change your count or type of yarn.
4. It will wind package dyed yarn, even if damp. No jumping out of guides.
5. It will wind conditioned yarn. In fact, it is frequently equipped with an emulsion attachment.
6. Changeovers from cones to tubes, or vice versa, are comparatively inexpensive.
7. One side can wind cones and the other tubes, if desired.

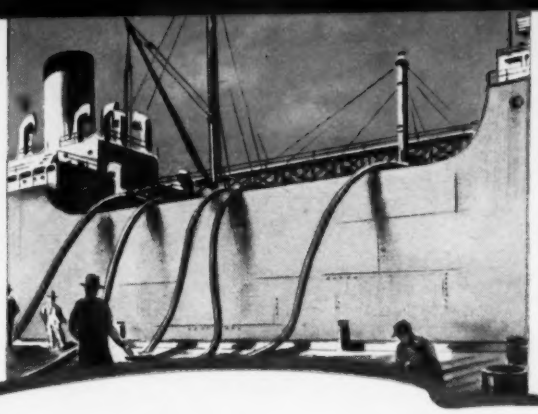
For today or tomorrow, Foster Model 102 Flexibility is an asset that you need. It also gives you TWICE THE PRODUCTION WITH 1/3 LESS COST as compared with older Models.

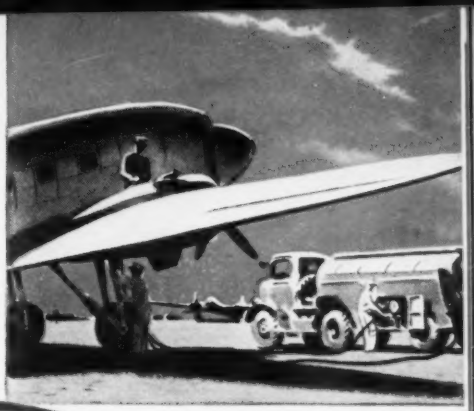
FOSTER MACHINE CO., WESTFIELD, MASS.

Southern Office, Johnston Bldg., Charlotte, N. C.

FOSTER *Model* 102

...tic rubber facilitates well ...g. MANHATTAN oil-proof ...y Hose and Molded Prod-...ing used in all important ... Tanker time is saved by ...ynthetic rubber in Paranite ... Oil Hose.

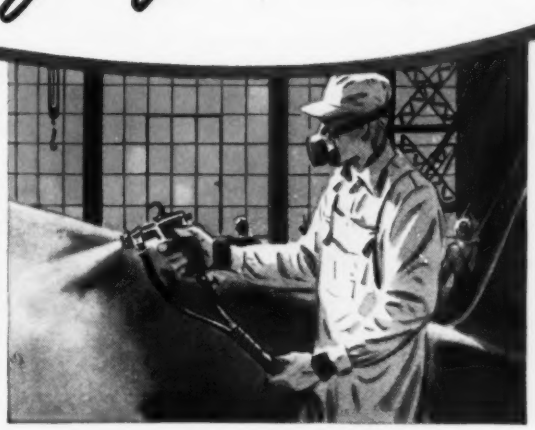




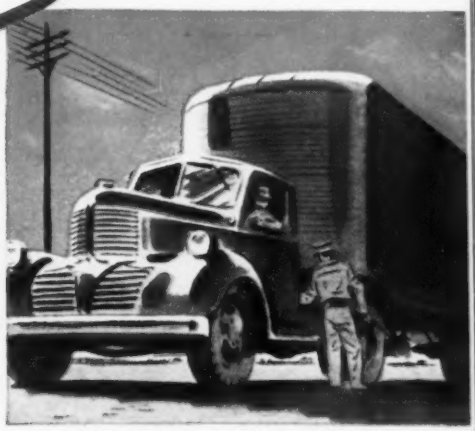
Synthetic rubber's most vital use is in airplanes—for fuel and control hose, in molded diaphragms, and in motor packings, of which MANHATTAN is a principal supplier.

Long before Singapore

Air-operated tools deliver steadier service with longer hose life when hose is lined with G.O.P. synthetic rubber.



Paint spraying speeds delivery of combat equipment. Only synthetic rubber resists action of paint and varnish.



Trucks, buses, tanks and jeeps, all have scores of oil-proof synthetic rubber parts to keep 'em rolling.

MANHATTAN was a Veteran in the use of *Synthetic Rubbers*

For years before the fall of Singapore, the use of several varieties of synthetic rubber was well established in the manufacture of the products illustrated. These synthetic rubbers had special properties not possessed by natural rubber, such as: resistance to oils, sunlight and heat.

Because natural crude rubber was satisfactory, plentiful, and the supply seemed safe (Singapore was considered impregnable), no major (and costly) research and development programs to perfect and supply synthetic rubbers as a substitute had been initiated.

Under today's rising and tremendous program, widely publicized, vast quantities of *all-service* synthetic rubbers will be produced in months to come to replace natural crude rubber. Differences in physical characteristics, not easily recognizable to the layman, but of profound significance to the rubber technician, present highly diversified problems in the art of compounding and using these new *all-service* synthetic rubbers.

The accumulated experience of all manufacturers in the use of special-type synthetic rubbers is proving very valuable in building up the art of substituting these new synthetic types for natural rubber. The full and free interchange of information, fostered by Washington and the Industry, is speeding the results at a pace which should confirm confidence in the ability and talent of the Industry to turn out good, usable, often better, products for War and essential civilian needs.

MANHATTAN expects to further its already substantial contribution to this tremendous program of development through extensive facilities, engineering talent and a long and comprehensive experience in the use of special-type synthetic rubbers in its Paranite —G.O.P. products.

50th YEAR OF RESEARCH

Pioneering in the developments and applications of synthetic rubbers was a natural sequence to the continuous program of research which has been inherent with MANHATTAN throughout the 50 years of its progress. To the long series of contributions to Industry, more will be added.

THROW YOUR SCRAP INTO THE SCRAP!

KEEP AHEAD WITH MANHATTAN

THE MANHATTAN RUBBER MANUFACTURING DIVISION
of RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES PASSAIC, NEW JERSEY

How to insure Machine life with a Policy written in Oil !

Insurance policies usually reimburse the beneficiary for the loss or injury sustained. But today money alone cannot replace damaged machines or vital moving parts. Nothing can compensate for time lost in repairs and delay in vital Textile production.

The best protective policy is preventive maintenance. And the first thing to check is your lubrication system. Many oils and many greases are on the market. But only *one* grade and *one* special quality lubricant can be right for each of your specific operations.

Cities Service *precision lubricants* are designed for every textile use—and built to stick to the job twenty-four hours a day, seven days a week.

Be sure of getting peak performance from your equipment—at a minimum of time and trouble. *Make sure* by conferring with your Cities Service representative now!

Write to your nearest Cities Service office, today. There is no obligation, of course!

CITIES SERVICE OILS
ONCE-ALWAYS

CITIES SERVICE OIL COMPANY
NEW YORK · CHICAGO

IN THE SOUTH
ARKANSAS FUEL OIL COMPANY
SHREVEPORT, LA.

FIRST AID *for Wartime Merchandising of Rayons*

War has brought many changes to the textile industry—changes that affect each one of us, from mill man through to merchant.

There's rayon enough—a peak year to date—but the demands on rayon are enormous! More civilian needs must be supplied than ever before; vital military demands are pouring in hourly.

This means, of course, plenty of merchandising readjustments. There'll be headaches; there'll be nervous stomachs. May we suggest some First Aid hints for rayon's wartime ills?

AILMENT	SYMPTOMS	CURE
WARTIME VIRUS (epidemic of new, unknown fabrics)	Buyer scepticism regarding new fabrics. Consumer fear of "innovations."	Tubize tests new constructions for wearability, cleanability, color fastness, etc. The Tubize informative labeling answers questions, insures customer confidence.
PERSONNEL-ITIS (difficulty in obtaining sales help)	Salesmen leaving for military duty. More selling to be done—fewer sales people to do it. Shortage of experienced sales clerks in retail stores.	The Tubize informative label does a selling job for itself. There's enough information on the hang tag to be a "sales training course in a nutshell."
"RETURNS" HEADACHE (excessive customer returns)	Customers complain: "Fabric shrank." "Washed poorly." "Stretched in cleaning."	The simply-worded Tubize label tells the customer exactly how to care for her garments, how to wash or dry clean them properly. The certified consumer-serviceability enhances value of fabric, induces customer to handle rayons more carefully.
ADVERTISING ACHES AND PAINS	Newspaper and magazine space for advertising limited. Display materials curtailed.	Tubize consistent trade and national advertising aids the manufacturer and the retailer. The Tubize hang tag draws aisle traffic because of its display value.
CONSERVATION JITTERS	Customers want to know: "Why must we conserve?" "What must we conserve?" "How must we conserve?"	Tubize has inaugurated a wide-spread trade and consumer advertising campaign to inform the public on the "why," "how" and "what" of wartime conservation.

Plants

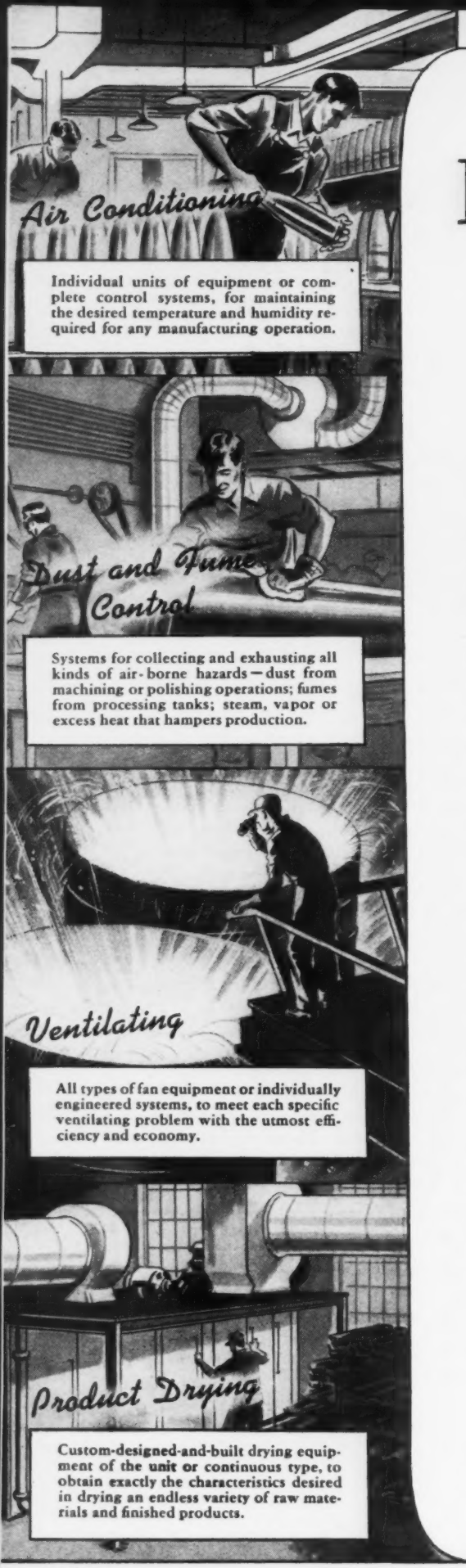
Hopewell, Va.
Rome, Ga.

TUBIZE CHATILLON *Corporation*

VISCOSE AND ACETATE RAYON YARNS AND FABRICS

Executive Offices

Two Park Ave.
New York City


Air Conditioning
Individual units of equipment or complete control systems, for maintaining the desired temperature and humidity required for any manufacturing operation.
Dust and Fume Control
Systems for collecting and exhausting all kinds of air-borne hazards—dust from machining or polishing operations; fumes from processing tanks; steam, vapor or excess heat that hampers production.
Ventilating
All types of fan equipment or individually engineered systems, to meet each specific ventilating problem with the utmost efficiency and economy.
Product Drying
Custom-designed-and-built drying equipment of the unit or continuous type, to obtain exactly the characteristics desired in drying an endless variety of raw materials and finished products.

HOW A SHELL

THE CASING of this long, slim, deadly missile started life as a homely hunk of brass. But you can't take these slabs of brass and—presto!—turn them into shell casings. They're rough, bumpy—need a shave—before they can be drawn into smooth, glistening casings. So these shell cases in embryo—great rectangular planks of solid brass, 10 feet long, a foot wide and 2 inches thick—go to the "barber shop". Sharp, whirling milling cutters go to work, trimming off literally mountains of brass "Whiskers" or chips.

If allowed to accumulate, these chips would quickly overwhelm shop, machines and men. Here is a job for Air at Work . . . a hurricane of air, harnessed by a Sturtevant pneumatic conveying system. Heavy metal chips as well as heat and smoke are whisked away . . . metal is reclaimed . . . busy machines are kept cool for continuous work . . . men are more efficient . . . work is speeded.

This is another of those *yesterdays of pioneering* that are bringing Victory closer today. First developed for a Connecticut Brass Mill in 1910, similar slab milling chip exhaust systems are now at work in the foremost ammunition plants in the country. And it's just one of countless ways that Sturtevant is supplying the know-how and equipment to make Air serve the war effort.

Air Conditioning, Ventilating, Drying, Heating, Dust and Fume Control, Mechanical Draft . . . in designing and building these *precision* installations, we have learned many wartime ways to put air to work more *efficiently.* And we have unearthed many new developments that will make air an even greater ally of industry when Victory is won.

B. F. STURTEVANT CO., HYDE PARK, BOSTON, MASS.
Branch Offices in 40 Cities
B. F. Sturtevant Company of Canada, Limited—Galt, Toronto, Montreal

STURTEVANT—FOUNDER OF THE AIR HANDLING INDUSTRY

Sturtevant Systems AND EQUIPMENT

REG. U. S. PAT. OFF.

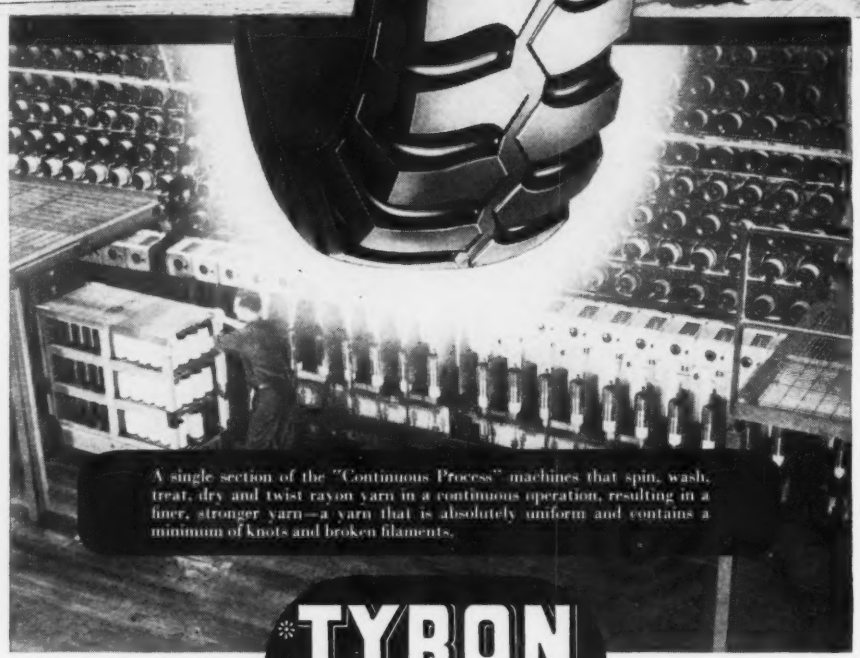
CASE GETS SHAVED AT BIRTH!

Sturtevant
REG. U. S. PAT. OFF
Puts Air to Work

Engineered for Precision VENTILATING, HEATING, AIR CONDITIONING, DRYING, DUST AND FUME CONTROL, PNEUMATIC CONVEYING, MECHANICAL DRAFT

AIRCRAFT Rayon cord is used for many bomber, transport and pursuit plane tires because with it, tires of greatly reduced weight can be made, able to withstand the impact of high speed landing shocks.

TOW TRUCK In these heavy-duty truck tires, rayon cord is used because of its ability to withstand high temperatures—a factor of particular importance on the hot roads and burning sands of present battlefronts.



A single section of the "Continuous Process" machines that spin, wash, treat, dry and twist rayon yarn in a continuous operation, resulting in a finer, stronger yarn—a yarn that is absolutely uniform and contains a minimum of knots and broken filaments.

Industrial Tire Yarn is ***TYRON** SUPER STRENGTH —RAYON YARN *Identified by this Label*

HOW INDUSTRIAL'S "Continuous Process" RAYON YARN SERVES THE TIRE INDUSTRY

To meet the demands for more and tougher tires to equip the fighting aircraft, motorized artillery and transports that are carrying our armed forces to victory on more fronts every day, Industrial Rayon Corporation is replacing regular strength yarn production with high tenacity yarn for tire cord. For this all-important purpose, the same "Continuous Process" used to achieve the highest production efficiency and the finest quality of product in the entire viscose rayon industry, is being utilized. The strength and heat resistance inherent in this rayon cord makes it possible to produce tires which run cooler, give longer mileage and require less rubber per tire, thus helping to conserve the nation's limited supplies of natural and synthetic rubber. This "Continuous Process" yarn is already widely used by the armed services for a variety of wartime needs. As it finds its way into tires, its superior quality, which has already revolutionized textile weaving standards, will undoubtedly win for it a permanent place in the rubber tire industry of the future.

Photos: U. S. Army Signal Corps, U. S. Army Air Force, Press Ass'n., Inc.

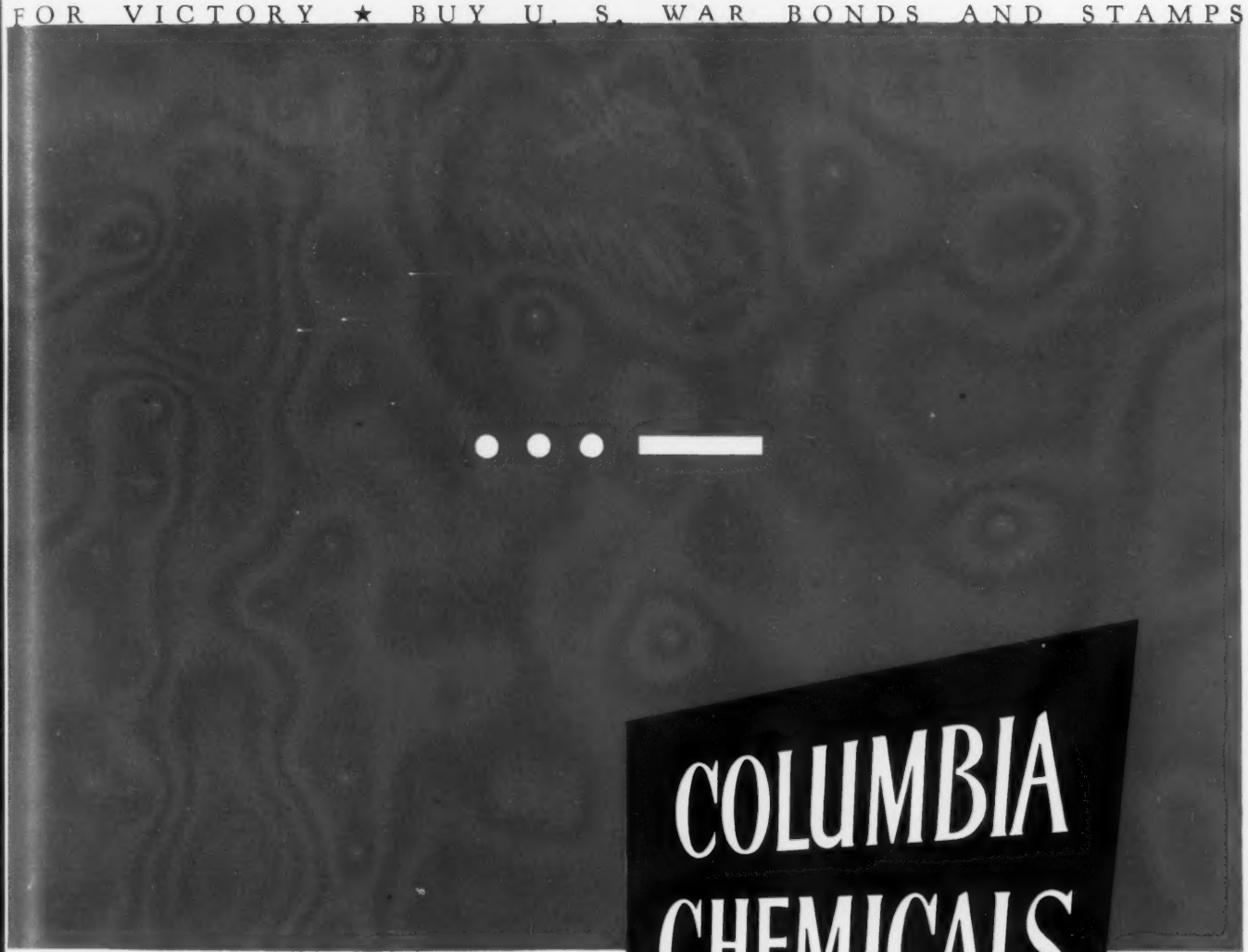
INDUSTRIAL RAYON CORPORATION, CLEVELAND, OHIO

New York Office, 500 Fifth Avenue

Producers of *SPUN-LO • *DUL-TONE • *PREMIER • RAYON YARNS *and* KNITTED FABRICS

*Reg. U. S. Pat.

FOR VICTORY ★ BUY U. S. WAR BONDS AND STAMPS



COLUMBIA CHEMICALS

For victory!

Victory—complete victory, at the earliest possible moment! Nothing short of that will satisfy American Industry.

That's why the tempo of industrial production has increased so rapidly. That's why new production records are so commonplace today they scarcely merit a moment's attention. That's why supplies and equipment for our armed forces are pouring out of our factories in a veritable deluge —a deluge which will inevitably overwhelm our enemies.

In this war production program, Columbia Chemicals are playing a vitally important role, helping to increase production, helping to make sure that finished products will provide the dependable performance so necessary in all types of war equipment.

If the pressure of expanded wartime schedules has created a production problem in your plant, involving the use of chemicals such as those listed here, why not let us discuss it with you on the chance that we might be able to make a suggestion or two which will be of benefit.

COLUMBIA Essential Industrial CHEMICALS

SODA ASH · CAUSTIC SODA · SODIUM BICARBONATE · LIQUID CHLORINE · SILENE* · CALCIUM CHLORIDE
SODA BRIQUETTES · MODIFIED SODAS · CAUSTIC ASH · PHOSFLAKE · CALCENE** · CALCIUM HYPOCHLORITE

*Precipitated Calcium Silicate **Precipitated Calcium Carbonate

PITTSBURGH PLATE GLASS COMPANY

COLUMBIA CHEMICAL DIVISION

GRANT BUILDING · PITTSBURGH, PA.

CHICAGO · BOSTON · ST. LOUIS · PITTSBURGH · NEW YORK · CINCINNATI · CLEVELAND · PHILADELPHIA · MINNEAPOLIS · CHARLOTTE

Ask Russia!

REALISTICALLY speaking it is no secret that we can make little or no textile machinery now, because strategic metals must be diverted for more urgent purposes. Rhetorically speaking, you may "ask Russia", if you want to know one reason for our inactivity in the textile industry. The photograph herewith shows a roomful of Semi-Automatic Hydra-Feed lathes, destined for the Soviet, that we are making under a U. S. Ordnance Lend-Lease contract.

It's a far cry from textile machinery to machine tools, which fact speaks volumes for the flexibility of our engineering and manufacturing facilities.

After the war these facilities will again be devoted to making more and better textile equipment than ever. In the meantime our services to you are necessarily restricted to supplying repair parts, keeping your machines in running order and helping you to plan for the future.

H & B AMERICAN
PLANT AT PAWTUCKET, RHODE ISLAND
Boston Office, 161 Devonshire St.; Atlanta Office, 815 Citizens & Southern National

H&B
TEXTILE MILL MACHINERY

MACHINE COMPANY
Bank Bldg.; Charlotte Office, 1201-3 Johnston Bldg.; Export Dept., United States Machinery Co., 115 Broad St., New York, U. S. A.

A WORLD OF POWER!

As one of the few great names in Electric Power, it has been the province of Crocker-Wheeler to pioneer in the application of Electric Motors and Generators for many individual industries.

Today . . . as a part of the greater Joshua Hendy Iron Works . . . our enlarged productive facilities and specialized knowledge are more than ever available to all war industry.

Crocker-Wheeler Electric Manufacturing Company. Ampere N. J., Division of Joshua Hendy Iron Works.

TRADE MARK REG. U.S. PAT. OFF.

CROCKER-WHEELER

SINCE 1888

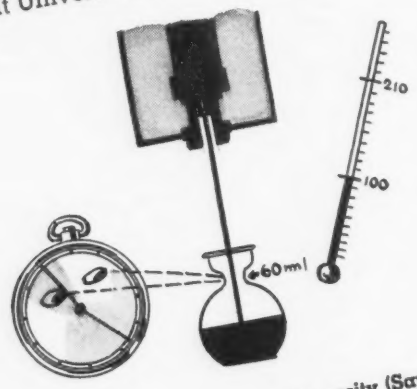
VISCO

TIDEWATER LUBRICANIA

DEFINITION: The resistance to distortion offered by a fluid, because of its cohesion or internal friction, is called Viscosity. A heavy bodied slow pouring liquid is high in viscosity.

TEST: The commercial instrument commonly used in the United States for determining viscosity of mineral lubricating oils is the Saybolt Universal Viscosimeter (S.U.V.). The viscosity, expressed in seconds (Saybolt Universal), is the time required for 60 milliliters of the liquid to flow through the standard aperture of the instrument at a stated temperature.

The Saybolt "Furol" Viscosimeter is often used in connection with very heavy oils. Multiply Furol seconds by 10 to obtain approximate Saybolt Universal seconds.



Examples	Viscosity (Saybolt Universal) at 100°F	at 210°F
Kerosene	32 sec.	
Light Machine Oils	150-250 sec.	40-50 sec.
Steam Cylinder Oils	2000-6000 sec.	150-250 sec.

DRUMS! DRUMS! DRUMS!
War needs make it extremely important that all empty drums be returned immediately.

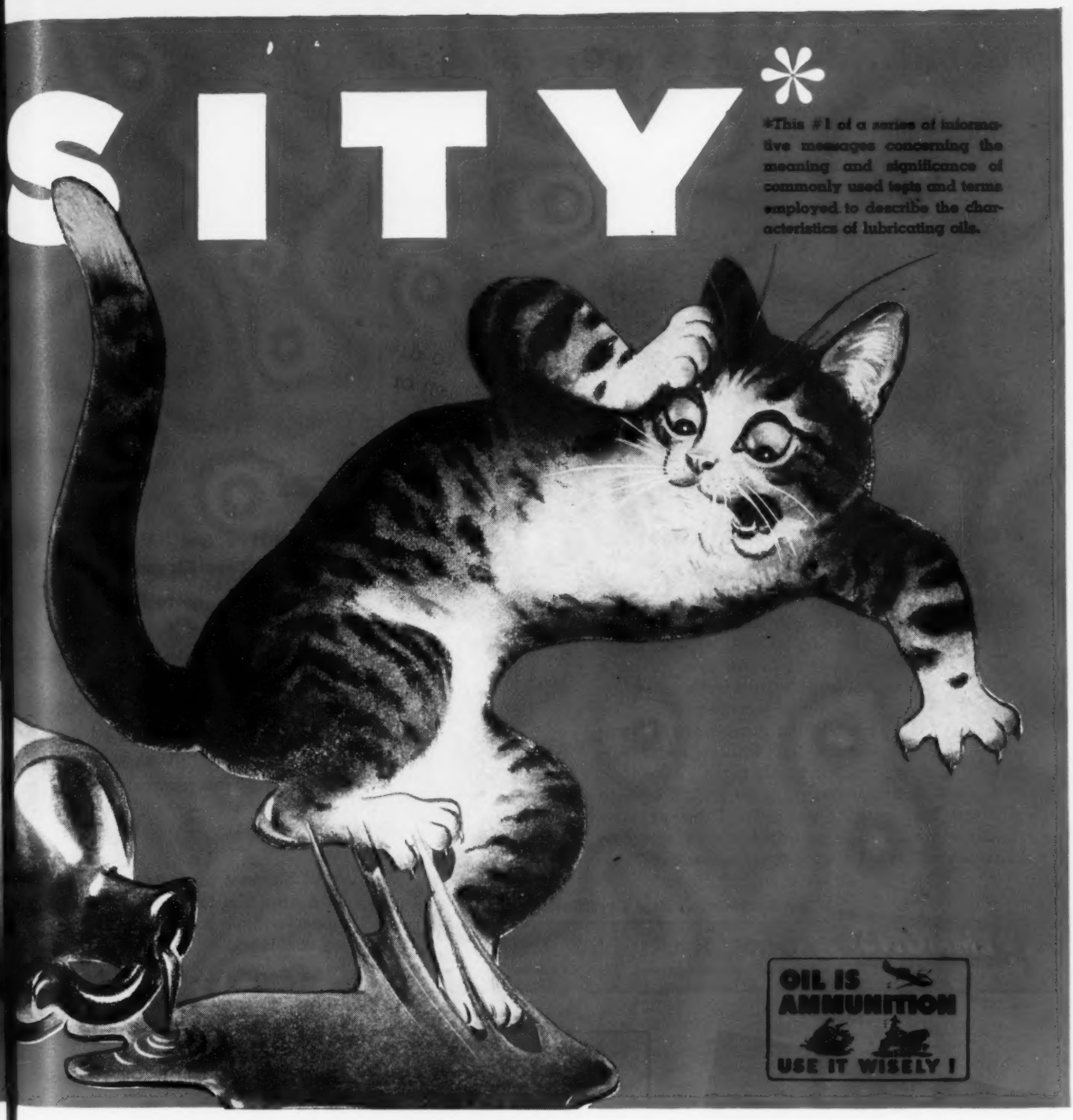
INDUSTRIAL TYCOL OILS-GREASES

TYCOL

SCIENTIFICALLY

SITY*

*This #1 of a series of informative messages concerning the meaning and significance of commonly used tests and terms employed to describe the characteristics of lubricating oils.



Tycol lubricants are manufactured to definite, predetermined viscosities. Each Tycol lubricant when used for the recommended purpose provides correct viscosity at the operating temperature. This accomplishes complete separation of the rubbing surfaces by a film of oil for their protection, yet without needless drag from excessive fluid friction. This is but one of many tests that assure unvarying high quality in Tycol lubricants.

TIDE WATER ASSOCIATED OIL COMPANY

Eastern Division: 17 Battery Place, New York • *Principal Branch Offices:* Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

MAKERS OF THE FAMOUS VEEDOL MOTOR OIL

INDUSTRIAL LUBRICANTS

ENGINEERED FOR EVERY INDUSTRIAL USE

TOUGH!...But Smooth in Operation...

and Ready for Action...

Toughness, plus careful smoothing, make Emmons Certified Steel Heddles best for better weaving.

High-tested tensile strength and corrosion-resistant plating mean long life, no rust, less fly. Extra polishing and streamlining of heddle eyes eliminate an important cause of costly warp breaks.

All heddles are carefully inspected—and samples are periodically tested by an independent laboratory—in order to merit the "Inspected and Approved" seal and the "Certified" tag.

You will find Emmons ready to go "all out" to give you best possible delivery. Realizing your problems, we are eager to help out—so new customers as well as old can count on our best efforts.

Be Certain . . . Buy Certified

EMMONS LOOM HARNESS COMPANY

Lawrence, Massachusetts . . . . Charlotte, North Carolina

STRONG!...But "Air-Spaced" For Free Movement

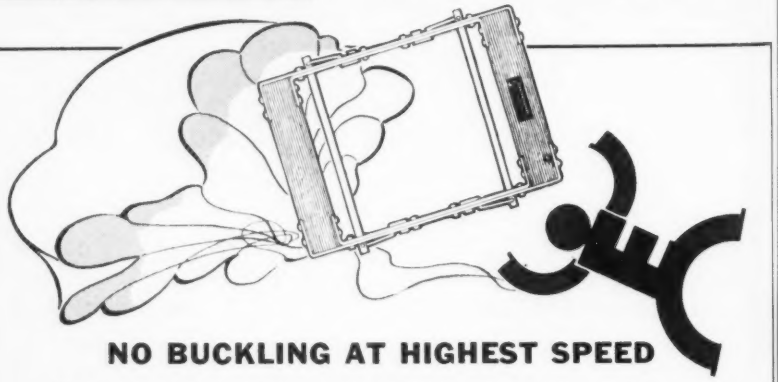
With air space up to 70%, you get freer warp movement with Emmons reeds, no roughing the yarn. Dents accurately spaced protect you against reedy cloth, rejects and seconds. Strong but resilient enough to let good knots, slubs and nits pass through without the spreading that causes streaky cloth.

All Emmons products are shipped only when the tests of an Emmons Inspector have proved them deserving of this seal.

Be Certain . . . Buy Certified

Lawrence, Mass., and Charlotte, N. C. Products stocked in Charlotte and Lawrence. Reeds manufactured at both plants. Branch offices: Clifton Watson, Manager of Southern Sales, George Field, Plant Manager, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2543) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 52 Vanderbilt Ave., New York (Tel. Lexington 2-6060) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

ARGENTINA, Buenos Aires, Roberto Zander, 345 Juan Jaures; BRAZIL, Rio de Janeiro, A. Polak, Caixa Postal 362; CHILE, Valparaiso, W. L. Robinson, Casilla 1570; CUBA, Havana, J. M. Perez-Pena, Box 1611; MEXICO, Mexico City, D. F. Leo Lenk, Apartado 533; COLUMBIA, Medellin, C. E. Halaby & Co., P. O. Box 139.

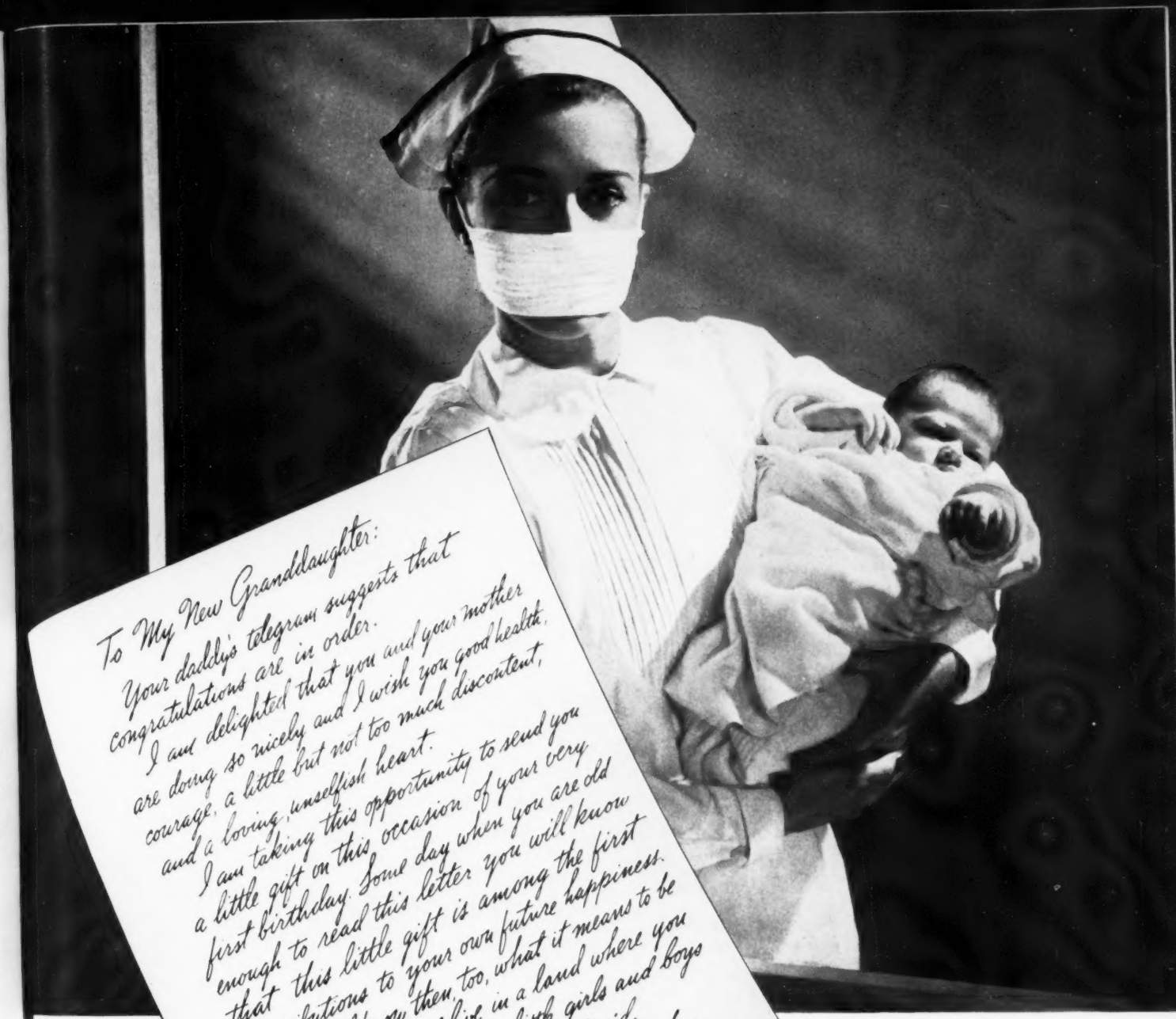


NO BUCKLING AT HIGHEST SPEED

Emmons Heddle Frames are built to "take it" Extra rolled rivets, hand-picked, knotless lumber doubly shellacked, make the difference. And the new black EMMONITE finish on frame ends, a phytanium-blended *protective penetrant*, smooths metal parts, stops rust, won't crack, craze or peel off.

EMMONS

See latest TEXTILE WORLD YEARBOOK for Details on all Emmons Products.

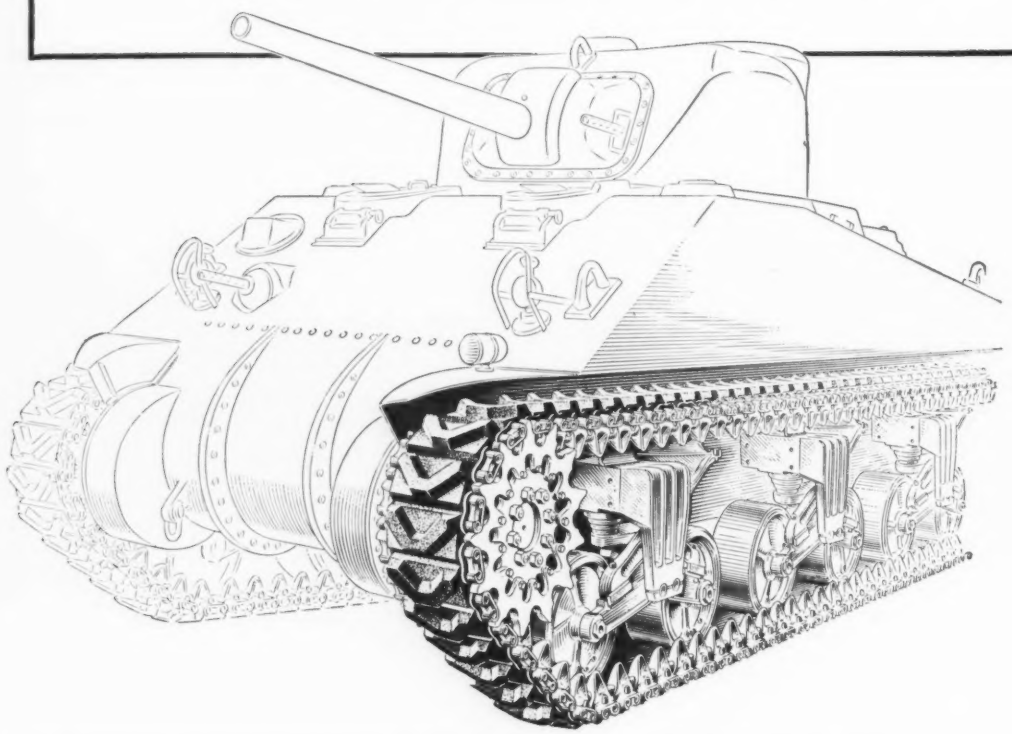

To My New Granddaughter:
Your daddy's telegram suggests that congratulations are in order.
I am delighted that you and your mother are doing so nicely and I wish you good health, courage, a little but not too much discontent, and a loving, unselfish heart.
I am taking this opportunity to send you a little gift on this occasion of your very first birthday. Some day when you are old enough to read this letter you will know that this little gift is among the first contributions to your own future happiness. You will know then, too, what it means to be an American and live in a land where you and thousands of other little girls and boys can grow up—free and unafraid.
Your Grandfather
Brown

Yes, This Little Girl's Grandfather, and you, and thousands of other men and women are doing their share in safeguarding the future of America by lending the U. S. Government funds to carry on the fight for freedom. Your purchase of War Bonds is an investment in America—and there is no finer gift anyone can give. Make the next gift you buy a War Bond. It is one that will be well appreciated and long remembered.

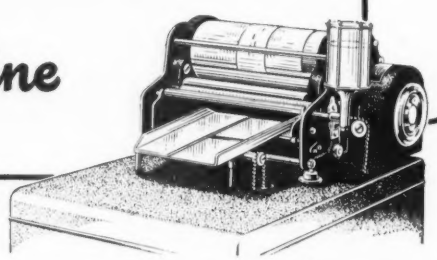
THE TORRINGTON COMPANY, Torrington, Conn.

Makers of Torrington Spring Beard and Latch Needles

the Tank took a hint from



the Duplicating Machine



THERE'S NO maintenance man in most offices, making regular trips with a grease gun to see that bearings have plenty of lubrication. That's one of the reasons why builders of business machines selected the Torrington Needle Bearing to lengthen the service life of their products.

With Army tanks, of course, it's entirely different. They're regularly and thoroughly inspected by highly skilled maintenance crews. But when a tank comes back from the battlefield, and the crew starts racing against time to get it ready for another lightning dash against the enemy, there's a big advantage in having bearings that seldom need attention. So the tank designers, like the business machine builders, turned to the Torrington Needle Bearing because its high load capacity helps prevent overloading or breakdowns, because its simple, effective system of lubrication allows the bearing to run for long periods without *any* attention at all. And its ready availability helps speed the job of tank production.

WHEN YOU PLAN YOUR POST-WAR DESIGNS, here's something to think about. Your peacetime customers will probably be looking for products that last longer, need less attention, work more efficiently—and the Needle Bearing can help you give them what they want. You will find a long list of typical Needle Bearing applications in Catalog No. 116. One of them may give you an idea for your own product—and Torrington engineers will be glad to help you work out the details.

THE TORRINGTON COMPANY

Established 1866 • Torrington, Connecticut, U. S. A.

Makers of Needle and Ball Bearings

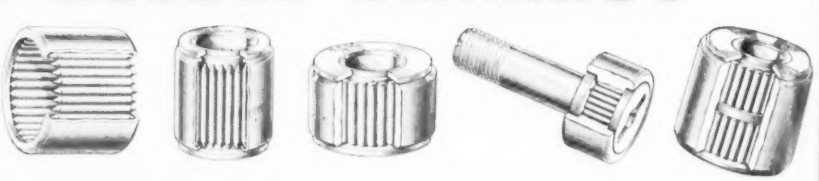
New York Boston Philadelphia Detroit
Cleveland Seattle Chicago San Francisco
Los Angeles Toronto London, England

LET'S GO! U.S.A. KEEP 'EM FLYING

TORRINGTON NEEDLE BEARINGS

KEYED TO TODAY'S NEEDS

AND TOMORROW'S TRENDS



IF MILDEW OR MOLD IS ONE OF YOUR PROBLEMS—

Ask CIBA *about these...*

DOWICIDES

Dowicides are fungicides and germicides that prevent damage by mildew and bacteria.

WATER SOLUBLE

DOWICIDE

- **A** Sodium Orthophenylphenate
- **C** Sodium Chloro-2-Phenylphenate
- **E** Sodium 2 Brom 4 Phenylphenate
- **F** Sodium Tetrachlorphenate
- **G** Sodium Pentachlorphenate

The above listed Dowicides are water soluble types for use against mold and bacterial deterioration in paper, leather, textiles, glues, sizes, etc.

SOLVENT AND OIL SOLUBLE

Water *emulsions* of this type can be prepared.

DOWICIDE

- **I** *Orthophenylphenol*
- **III** Chloro-2-Phenylphenol
- **V** 2 Brom 4 Phenylphenol
- **VI** Tetrachlorphenol
- **VII** *Pentachlorphenol*

The numbered Dowicides listed above are solvent and oil soluble preservatives against mold and bacterial deterioration in paper, leather, textiles, glues, sizes, etc.

Today Dowicides are at war fighting along with our military services in all parts of the world. This is just another way in which the Ciba Company is intimately connected with the war effort by overcoming the devastating effect of bacteria and fungi.

May we assist you with your problems on these subjects?

DYESTUFFS • CHEMICALS • INTERMEDIATES

CIBA COMPANY, INC.

Greenwich & Morton Sts.

NEW YORK

BOSTON · CHICAGO · MONTREAL · CHARLOTTE
PROVIDENCE · SAN FRANCISCO · PHILADELPHIA

VAT DYES OF THE DOW CHEMICAL COMPANY

You can use them . . . to make your war packaging more efficient . . . to help reduce damage in transit and thus curtail waste of materials, manpower, machinery and transportation facilities.

"How To Pack War Materials" was "authored" by seventeen manufacturers who found the answers to their new packaging problems in the H & D Package Laboratory. From their experiences you will get ideas which can be readily incorporated in your own corrugated shipping boxes, to save you time and money all along the line.

Published by H & D as a contribution to more efficient, more effective shipping, this new addition to "The Little Packaging Library" is yours for the asking. Send for FREE copies today.

Protect the Product

BETTER SEE H&D AUTHORITY ON PACKAGING

PACKAGING "TEXT-BOOKLETS" FREE

A little time spent in taking H & D's complete "refresher course" in packaging will pay big dividends. Full of helpful information on every phase of distribution, you'll find it a valuable all-year reference. Just say you want a complete set of Little Packaging Library Booklets.

HINDE & DAUCH Executive Offices:
4330 Decatur Street, Sandusky, Ohio

FACTORIES in Baltimore • Boston • Buffalo • Chicago • Cleveland • Detroit • Gloucester, N. J. • Hoboken • Kansas City • Lenoir, N. C. • Montreal • Richmond • St. Louis • Sandusky, Ohio • Toronto

Keep in touch with

BECCO

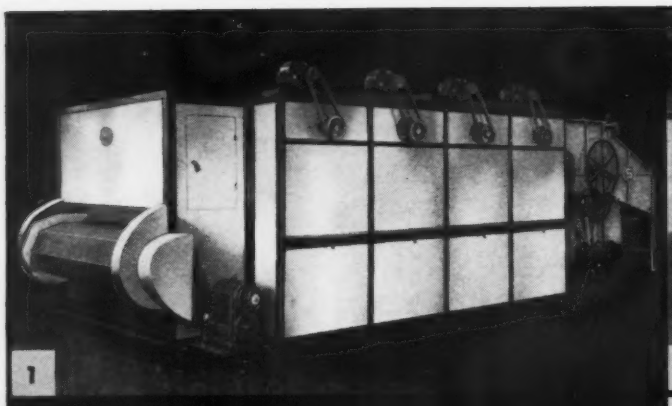
HYDROGEN PEROXIDE TECHNICAL SERVICE

for accurate, reliable, and comprehensive information on Peroxide Bleaching of all fibres... by all Methods and Procedures including all systems of Continuous Bleaching.

BECCO SALES CORPORATION

BUFFALO, N. Y.

Branch Offices in Boston, New York City, Philadelphia, Chicago and Charlotte



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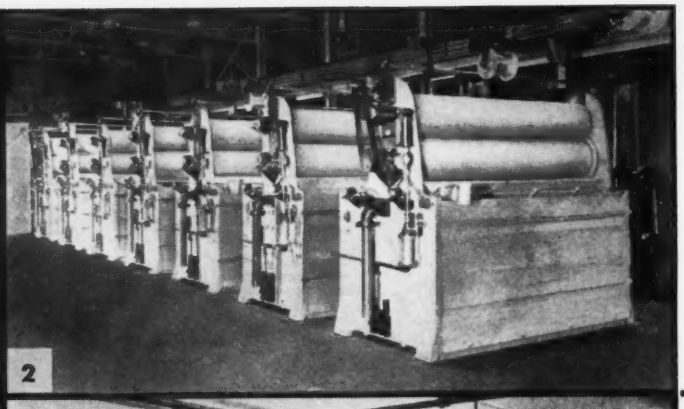

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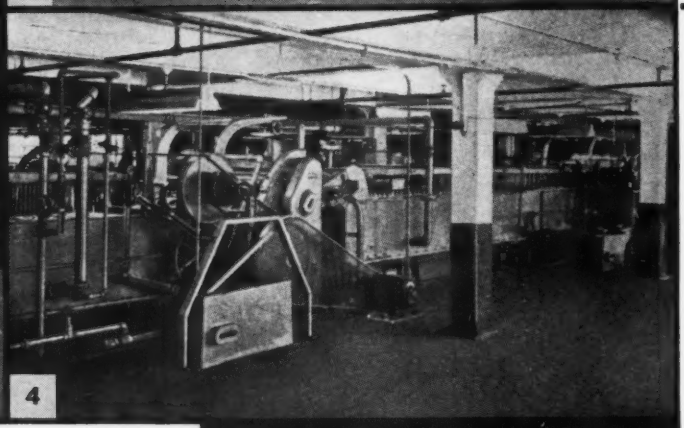
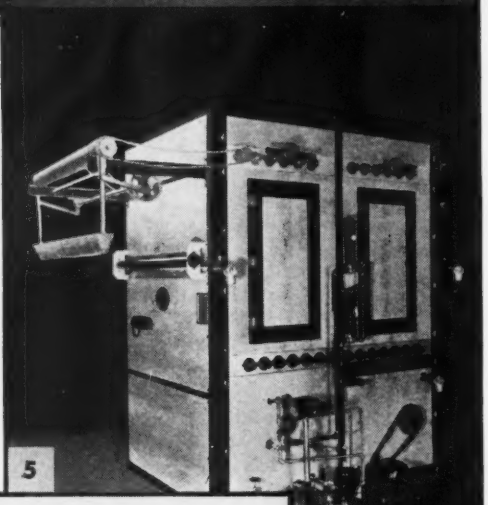


4

(1) Uniflow stock dryer with rotary feed. (2) Continuous cloth washer. (3) Uniflow tenter dryer. (4) Model "G" wool scouring train. (5) Cloth conditioner. (6) Ceiling scutcher. (7) Model "G" hydraulic squeeze rolls. (8) No. 26 fulling mill. (9) Cloth carbonizer.



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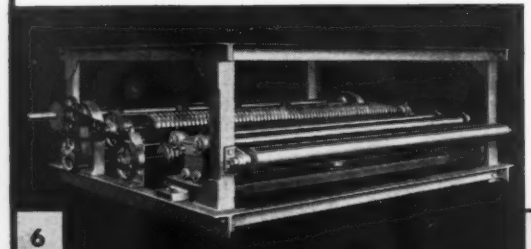
JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS MASS



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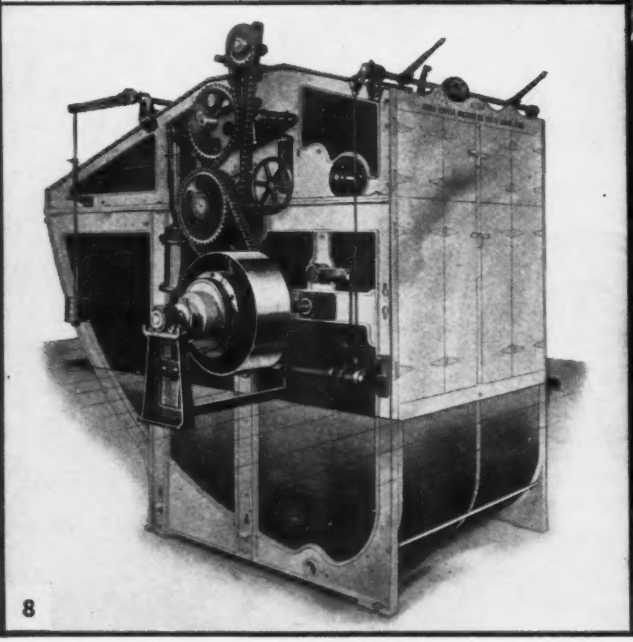

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9

HUNTER

Specialists in the Design & Construction of
WOOLEN AND WORSTED PREPARATION AND WET FINISHING MACHINERY

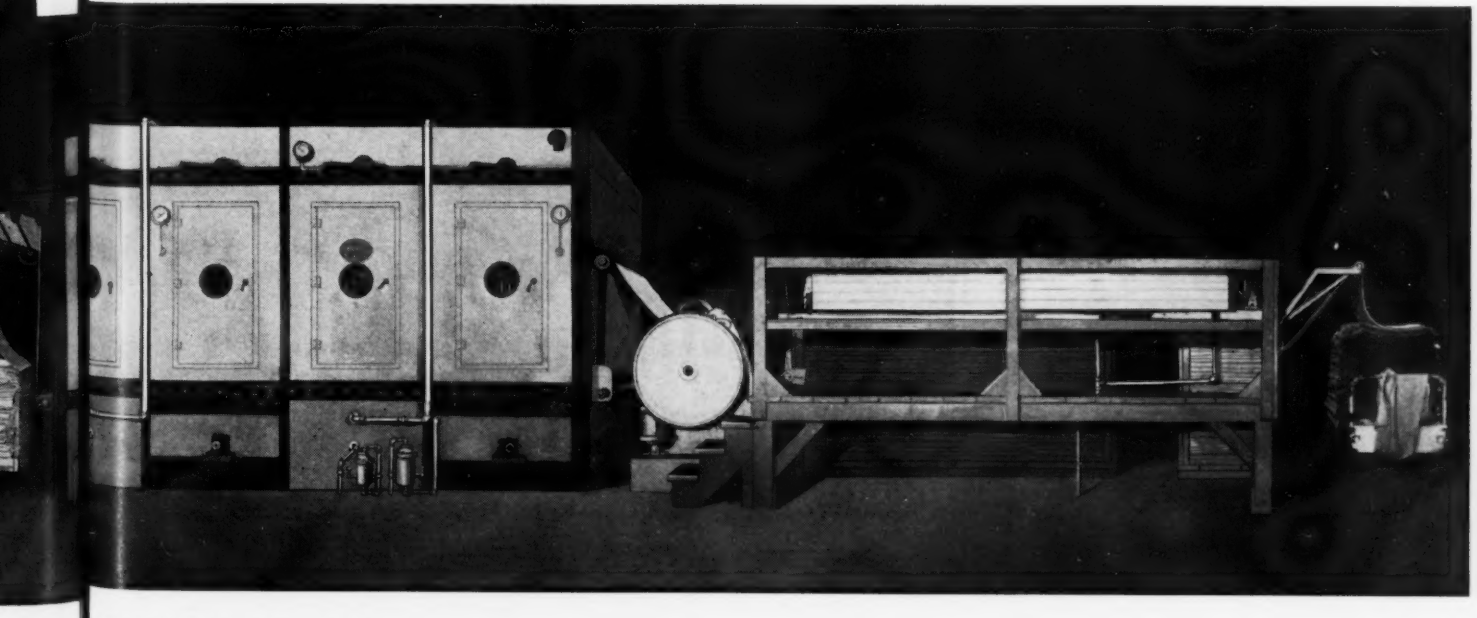
Every machine in the Hunter line is backed by years of experience in the textile industry. And every machine has been tested and proven in the field so that our specifications will meet your exact requirements, and give a guaranteed, predetermined production and result.

Hunter methods and machines are backed with engineering and field service which keeps you up-to-date on the latest ways of keeping production, quality and profits at their peak. There is never any obligation in calling on these men for service.

New catalogs, packed with engineering and production data, are continually being prepared. Be sure to put your name on our mailing list—just write Hunter on your own letterhead.

JAMES HUNTER MACHINE COMPANY

FOUNDED 1847 **NORTH ADAMS, MASS., U.S.A.**



For Waterproofing of all Military Fabrics

LUPOSEC P.Q.D.

A water repellent finish meeting quartermaster specifications for waterproofing military fabrics.

LUPOSEC C.U.

A waterproofing compound incorporating copper as a mildewproofing agent.

LUPOSEC I.N.

A solvent soluble waterproofing product prepared especially to meet specifications for processing army duck.

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.

Chemicals PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga.

THERE'S NO SHORT CUT TO KNOW-HOW!—

DAYCO WORSTED COTS
PIONEERED, ENGINEERED AND PROVED BY ACTUAL MILL SERVICE

1. Last up to 12 times longer.
2. Save time, money and power.
3. Uniform and non-varying.
4. Won't groove—have no bumps or hollows.
5. Won't chip out—need no aging.
6. Require less tension—eliminate resets after shut-downs.
7. Easily and quickly applied to the arbors.
8. Guaranteed not to come loose from the rolls.

Any grizzled top-kick will tell you there's no short cut to know-how.

But, today, there may be attempts made to find an easy short cut to the know-how of producing synthetics.

However, know-how means learning through years of experience. And there is no short cut to it.

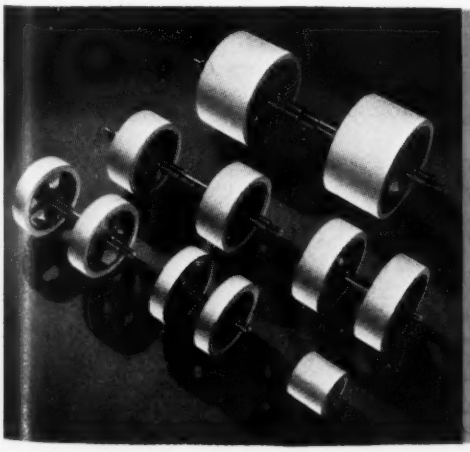
When in 1938, Dayton Synthetic Rubber Textile Products were introduced to set a new standard of durability and performance for an exacting industry, they climaxed Dayton's years of development and pioneering synthetic materials for printer's rollers, tires and industrial V-Belts.

So the current trend to synthetics finds Dayton ready and able to apply its broad peace-time background of technical and manufacturing experience in the development of synthetics to the wartime needs and requirements of America's military and industrial needs.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO
HOME PLANT, TEXTILE PRODUCTS DIVISION
WAYNESVILLE, NORTH CAROLINA
The Originators and Pioneers of Dayco Tempered Roll Coverings
MAIN SALES OFFICE
Woodside Building . . Greenville, S. C.

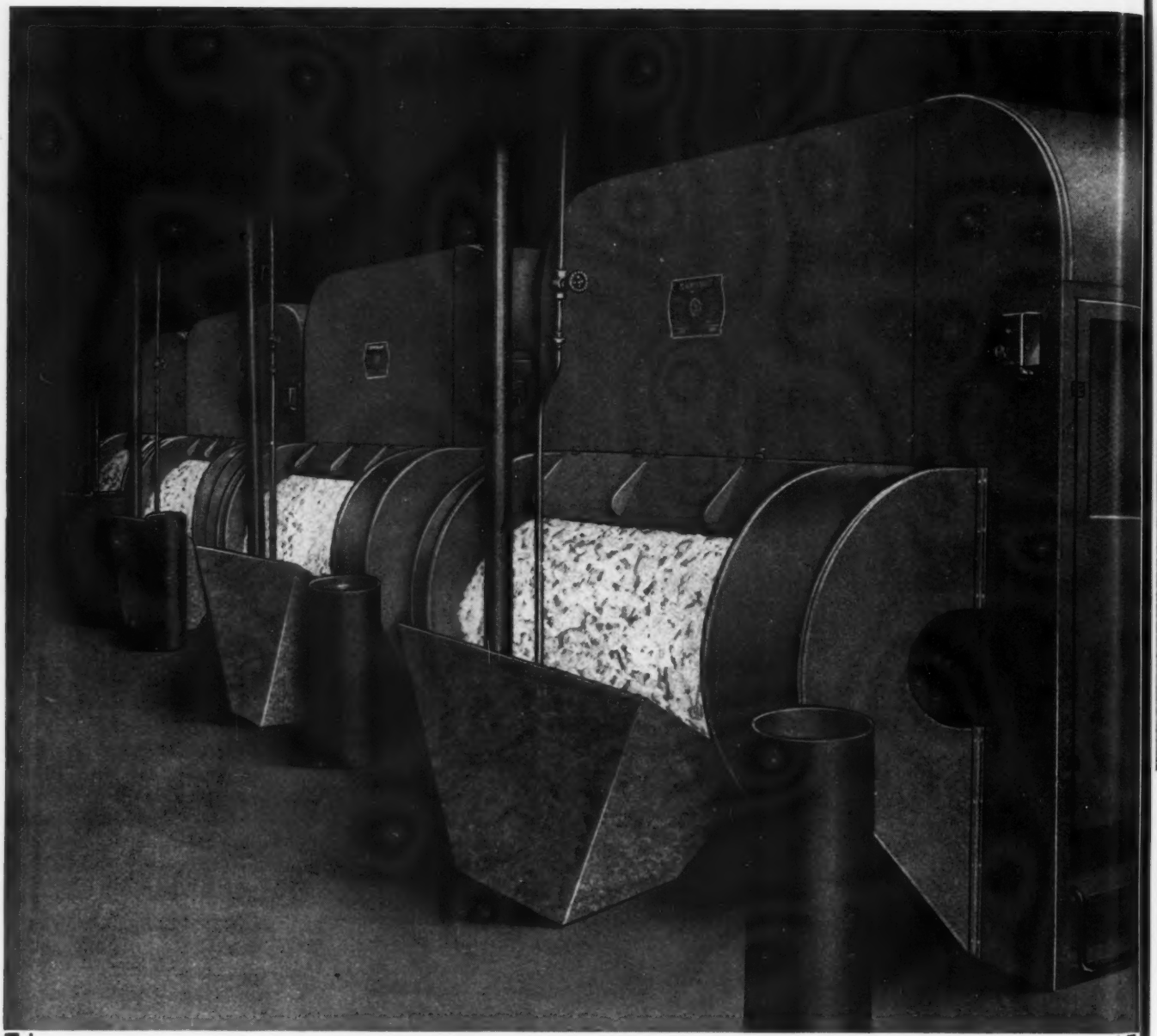
EXPORT DIVISION
DAYTON RUBBER EXPORT CORPORATION
38 Pearl Street New York, N. Y. U. S. A.

THROW YOUR SCRAP INTO THE FIGHT!
BUY WAR BONDS AND SAVINGS STAMPS



Dayton
***Thorobred* TEXTILE PRODUCTS**
Dayco WORSTED COTS—LOOM SUPPLIES
MADE BY THE WORLD'S LARGEST MANUFACTURER OF V-BELTS

Copyright 1942, The Dayton Rubber Manufacturing Company



A Recent Installation of Four SARGENT STOCK DRYERS
in a Progressive New England Worsted Mill

A Production Problem Solved -

• • • THIS IS THE IMPORTANT FACT!

Advantages of this modern installation

— Stock dried at lower temperatures — The use of low pressure steam
— Lower power consumption — Less floor space required
— Costly repairs and breakdowns eliminated — A better product

Why not let SARGENT solve your Drying troubles ?

Important Defense Items by SARGENT	Machines for Smokeless Powder Plants • Machines for Synthetic Rubber Plants • Textile Machinery for the manufacture of uniforms • Machined parts for large caliber guns

C. G. SARGENT'S SONS CORPORATION

Graniteville, Massachusetts, U.S.A.

Consolidated B-24's in Formation
Official Photograph,
U. S. Army Air Forces

Whatever American Yarn's contribution to this picture, it becomes mighty important to us when we realize what perfection in every detail means to the men who fly these ships.

This war has raised our sights on quality higher and higher, and while we know this is vital today, we also know it will be good business for tomorrow.

SUPER-MERCERIZED DURENE

Fabricord

AMERICAN'S Special 3-ply yarn for English Rib Construction

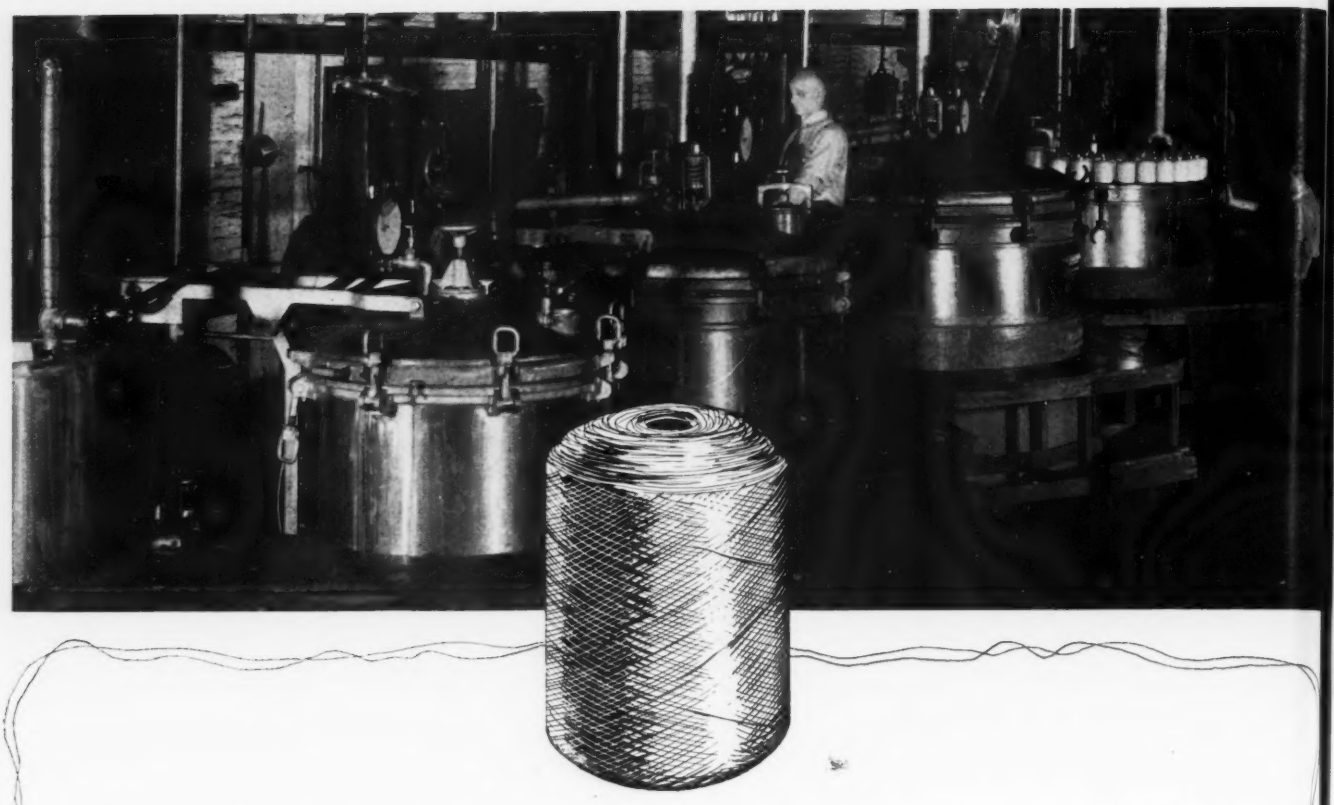
AMERICAN

YARN AND PROCESSING COMPANY

MOUNT HOLLY N. CAROLINA

Sales Manager: E. F. REDDING, MOUNT HOLLY, N. C.

CHICAGO, ILLINOIS	CHATTANOOGA, TENN.	HIGH POINT, N. C.	NEW YORK, N. Y.	PHILADELPHIA, PA	MOUNT HOLLY, N. C.
Mr. E. W. Wood	Mr. Tom Moore	Mr. E. J. Holbrook	Mr. Rowland Swallow	Mr Wm. S. Montgomery	Mr. Edwin Hutchison
222 West Adams St.	735 Chestnut Street		Empire State Bldg.	3701 N Broad St.	Miss E. R. Abernethy



FOR SKEIN, WARP OR PACKAGE DYEING

Whether they are doing "war work" or "civilian work", Globe gives its customers a varied and complete service, including package dyeing, skein dyeing—machine and hand—and warp dyeing, backed by more than three quarters of a century of yarn dyeing experience.

We are dyers of rayon, spun rayon, nylon, Aralac, blends and novelty yarns; dyers, bleachers and mercerizers of cotton skein yarns and warps.

PACKAGE DYEING ON TUBES

You Can Rely on Globe

Globe DYE WORKS CO.

1865 1943

FRANKFORD, PHILADELPHIA, PA.

RE-LIGHTING

the new manpower / production *requirement*

Vital to plants built and lighted for daylight operation

Most plants operating today were designed and built for peacetime, *daylight* working schedules. Wartime production demands night work. *Lighting based on daylight conditions is inadequate to serve the needs of night workers.*

Night production is generally acknowledged to be anywhere from 20% to 40% less efficient than daytime production. And poor lighting, with its consequent eyestrain, fatigue, and lower worker efficiency, is a major cause of this slump.

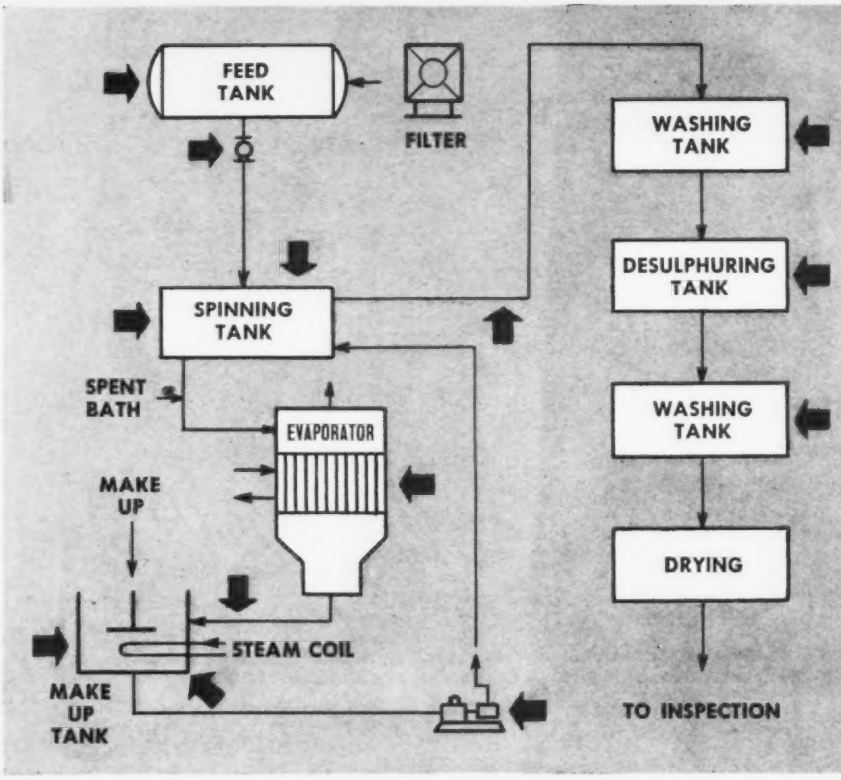
Re-lighting for 24-hour-a-day war production is the easiest, most economical remedy for this condition. Re-lighting does not mean discarding your present lighting system. It merely means bringing the equipment you have up to date by re-locating lamps to eliminate glare and shadow; increasing lamp wattages, re-spacing lamps, installing additional equipment to insure uniform lighting levels throughout your plant. A Silv-A-King lighting engineer can tell you exactly.

Silv-A-King has specialized on industrial lighting for 21 years. Silv-A-King quality equipment (fluorescent or incandescent) plus a Silv-A-King "engineered layout" make an unbeatable combination.

Send for your copy of our 16-page book:
"Light Is An Essential Production Tool"

BRIGHT LIGHT REFLECTOR COMPANY, INC.
306 Morgan Avenue, Brooklyn, N.Y.

SILV-A-KING MAKES *Light* WORK FOR YOU



Arrows indicate where Carbon, Graphite and "Karbate" Equipment is successfully applied in the Viscose Rayon Process. Some of the applications include:

FEED TANKS • SPINNING TANKS, HEATING COILS AND ACCESSORIES • EVAPORATOR TUBES • MAKE-UP TANKS AND STEAM COILS • PUMPS • PIPE, VALVES AND FITTINGS • WASHING TANKS • DESULPHURIZING TANKS.

For Improved Performance

ON RAYON PROCESS EQUIPMENT

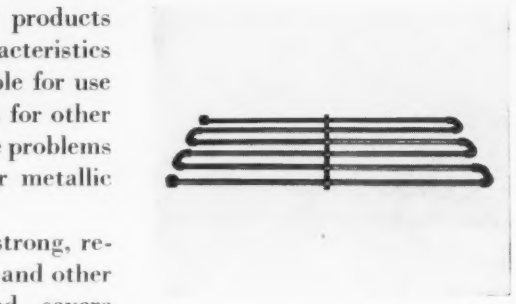
USE NATIONAL and KARBATE TRADE-MARK TRADE-MARK CARBON and GRAPHITE PRODUCTS

MANY UNIT OPERATIONS IN THE RAYON PROCESS ARE PERFORMED ECONOMICALLY AND EFFICIENTLY WITH EQUIPMENT MADE FROM CARBON MATERIALS.

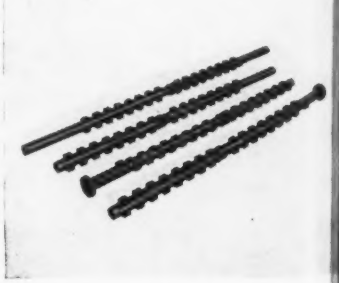
● Carbon, graphite and "Karbate" products possess chemical and physical characteristics which make them particularly suitable for use in the production of rayon as well as for other processes in the textile industry where problems are encountered due to corrosion or metallic contamination.

These products are mechanically strong, resist the action of most acids, alkalies and other corrosive materials, and withstand severe thermal shock. They are easily machined, and can be molded, extruded or fabricated into practically any desired shape.

"Karbate" equipment is impervious to the seepage of fluids under pressure. Graphite-base "Karbate" products possess heat-conducting properties comparable to those of many metals used for heat exchange applications.



Heating Coil ↑ *Section of Washing Tank* ↓ *Acid Tray Support Rails* ↑ *De-Aerated Water Manifold Line* ↓



Write for a copy of Catalog Section M-8800A describing properties and use of these materials.

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

National Carbon Company, Inc. CARBON SALES DIVISION, CLEVELAND, OHI

UNIT OF UNION CARBIDE AND CARBON CORPORATION UCC GENERAL OFFICES: 30 EAST 42ND ST., NEW YORK, N.

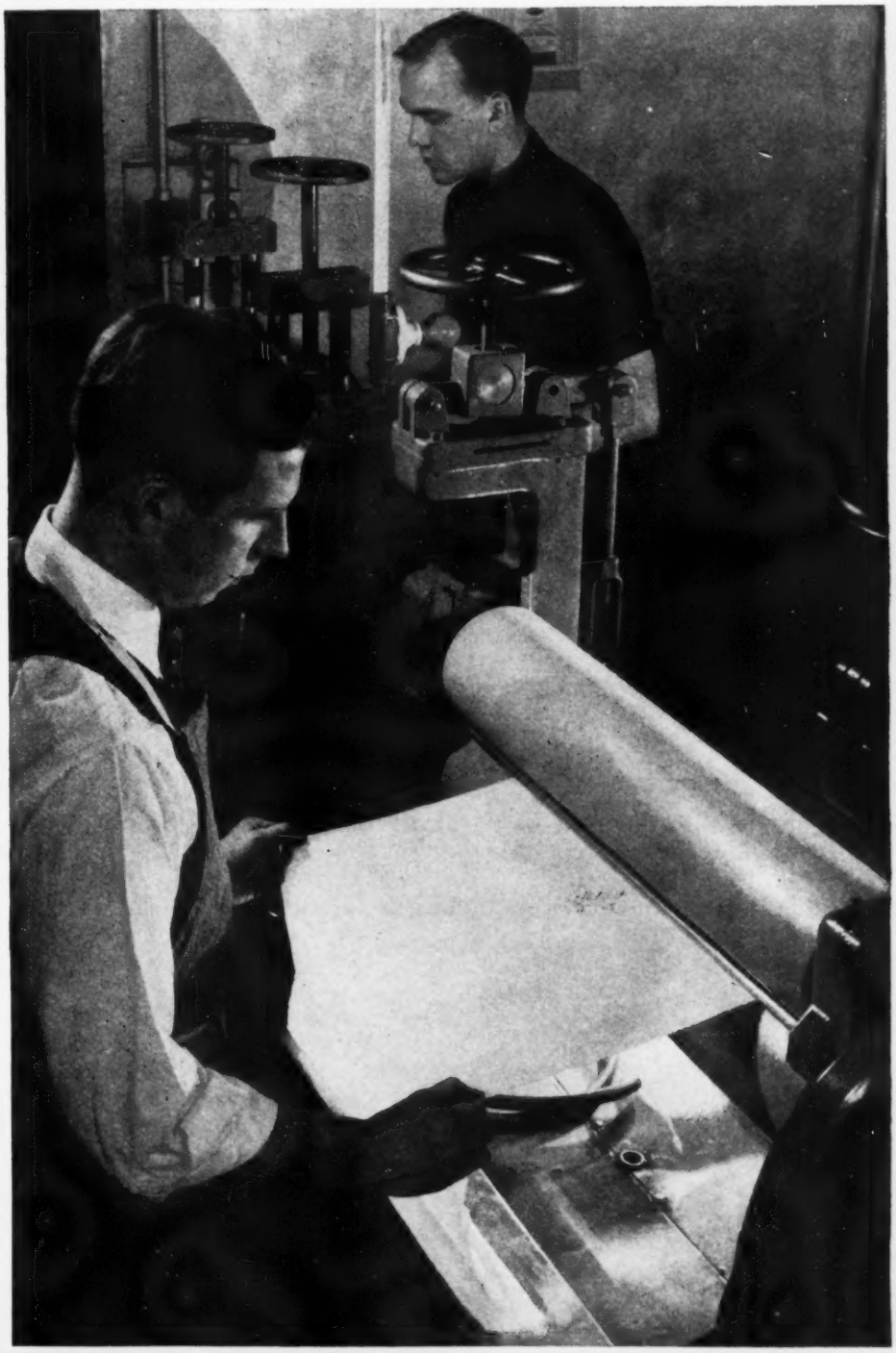
BRANCH SALES OFFICES: NEW YORK • PITTSBURGH • CHICAGO • ST. LOUIS • SAN FRANCISC

Is the set ~~light~~ *heavy*?

PAD AND CALENDER—Padding and calendering are probably two of the most difficult plant operations to reproduce satisfactorily in the laboratory. However, after much experimenting over a period of years, the Rohm & Haas laboratory has developed both a pad and calender which closely simulate mill conditions. The pad, shown in the foreground, and the calender, shown in the background, are electrically operated with controlled regulation of speed, pressure, and heat. The calender may be used for both plain and hydraulic calendering as well as for back-filling.

SEMI-WORKS FOR THE INDUSTRY—Specially-designed padders, calenders, drying ovens, slashers, and other indispensable textile equipment make the Rohm & Haas Sales Service Laboratory a valuable semi-works for the entire textile finishing industry.

In this complete textile finishing plant in miniature, new products receive tests under conditions almost exactly similar to actual mill conditions. Here, customers' problems are evaluated and checked to find the best possible solution. Let our semi-works for the textile industry assist you with your operating problem.



★ **LYKOPON**
★ **FORMOPON**
★ **PROTOLIN**
★ **RHONITES**
★ **RHOPLEXES**
★ **DEGOMMAS**
★ **TRITONS**
★ **RHOTEXES**

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Chemicals including Plastics . . . Synthetic Insecticides . . . Fungicides . . . Enzymes . . . Chemicals for the Leather, Textile and other Industries

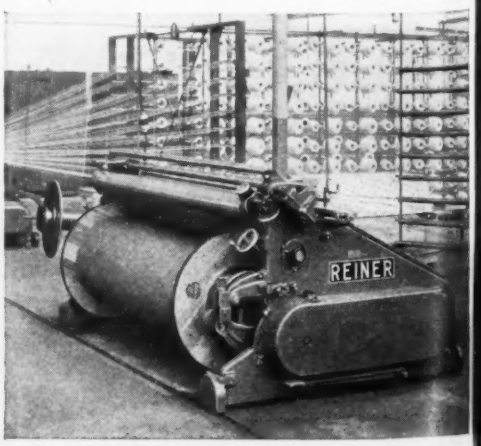
This machine, like all the others in the Reiner plant at Weehawken, New Jersey, is working at full capacity turning out small parts and machine tools for America's fighting forces. The Reiner organization, the men and women in the offices and plant, know that today "every minute counts".

You in the textile industry are also working at capacity, producing the fabrics to make our fighters the best dressed and best protected in the world. Manufacturers who use Reiner textile equipment, such as the High-Speed Warper, have machinery that won't let them down when "every minute counts".

We are still able to supply our regular line of textile machinery to those customers furnishing proper priority ratings: the High-Speed Warper (below), Tricot machines, Automatic Embroidery machines, Auto Heelers and allied equipment. Write to us also for spare parts.

ROBERT REINER, INCORPORATED
WEEHAWKEN, • NEW JERSEY

ROBERT
REINER
INCORPORATED



MACBETH

Photo Courtesy Julius Kayser & Co., Brooklyn, N. Y.

The recent installation of a new Macbeth Color Matching Skylight in the large Brooklyn, N. Y., plant of Julius Kayser and Company, for critical color matching represents the very latest development in daylight producing equipment.

The Kayser installation was primarily made to meet the requirements of the new, "Tentative Specification for Standard Illuminants in Textile Color Matching" of the American Association of Textile Colorists and Chemists.

The use of the AATCC specifications, it may be emphasized, make it possible for mills and commission dyehouses to meet the critical color requirements of important government agencies and other large buyers of textiles.

Impartial lighting scientists and engineers agree that the new Macbeth Color Matching Skylights are the only available commercial equipment that meets the new specifications.

Investigate the possibilities offered by Macbeth Skylights for color matching work. Our engineers will be glad to work with you. Write for complete details—today.

We are able to make early shipments.

Macbeth Daylighting

MACBETH DAYLIGHTING CORPORATION

227 WEST 17th STREET, NEW YORK CITY

Eyes straining into the dark, spindrift blowing back into his face from a smothered wave, faint-edged with phosphorescence—what thoughts are racing in the back of that vigilant face?

A nostalgic thought, of course, for homes whose warmth envelops him a thousand miles away. A new realization of what industrial, all-out production means in terms of safety and victory.

Yes, but behind it all an equally insistent query he will want answered when he comes home to pick up the old threads of his aspirations.

Let's file our answer now.

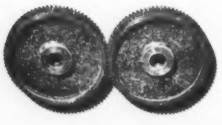
It will be a long answer—more production; more bonds purchased; giving up frills and luxuries; and sound, practical post-war plans that can be put to work quickly when he comes home.

Sound planning will include developing and manufacturing new machines—those ingenious, almost human mechanisms that have helped make America strong, free and democratic.

FIDELITY has been building such machines for 32 years for many industries. Write for your copy of "Facilities."

Builders of Textile Machinery, including Circular Knitting Machines, Skein Reelers, Backwinders, Fidelity-Rolandé Course Counters and Universal Ribbers

32 YEARS' EXPERIENCE



FIDELITY MACHINE COMPANY

3908-18 FRANKFORD AVENUE, PHILADELPHIA, PA.

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

"Look it up first"

in the TEXTILE WORLD YEARBOOK and CATALOG

In the Catalog Sections . . .

WHENEVER you need details on equipment or supplies . . . whenever you need information on companies or products . . . "look it up first" in your TextileWorld Yearbook and Catalog.

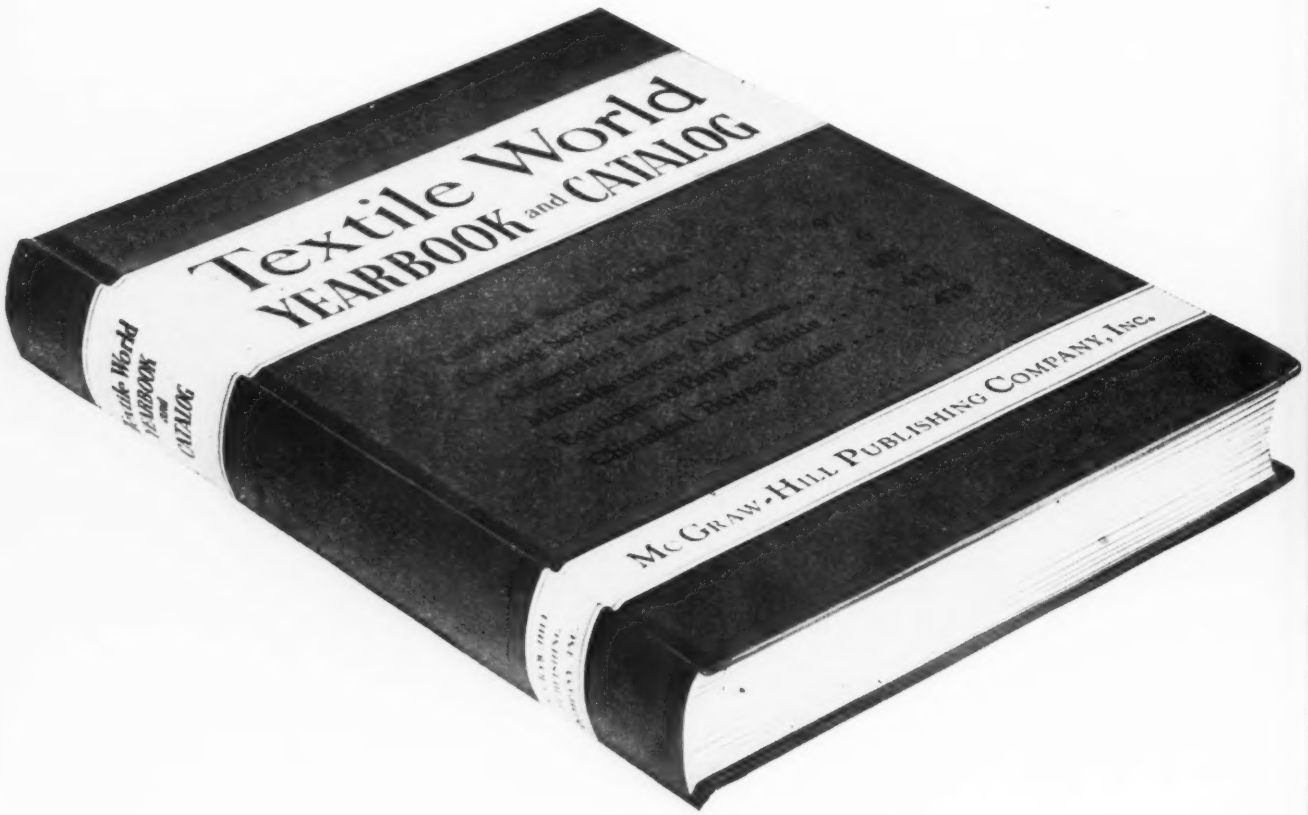
In this one *complete* volume you will find a classified directory of manufacturers of material, machinery and supplies used in textile mills—an equipment buyers guide, a chemical buyers guide—and over 200 pages of manufacturers' catalogs giving detailed information about their products.

Whatever you need "look it up first" in the Textile World Yearbook and Catalog.

In the Data Sections . . .

WHENEVER you need technical information about mill operation or maintenance, whether it be *general* data applicable to all textile mills, or *specific* data for the guidance of cotton men; wool men; silk and rayon men; or dyeing, bleaching and finishing men you will find the answers in the 100 pages of your Textile World Yearbook and Catalog, devoted to Mill Reference Data.

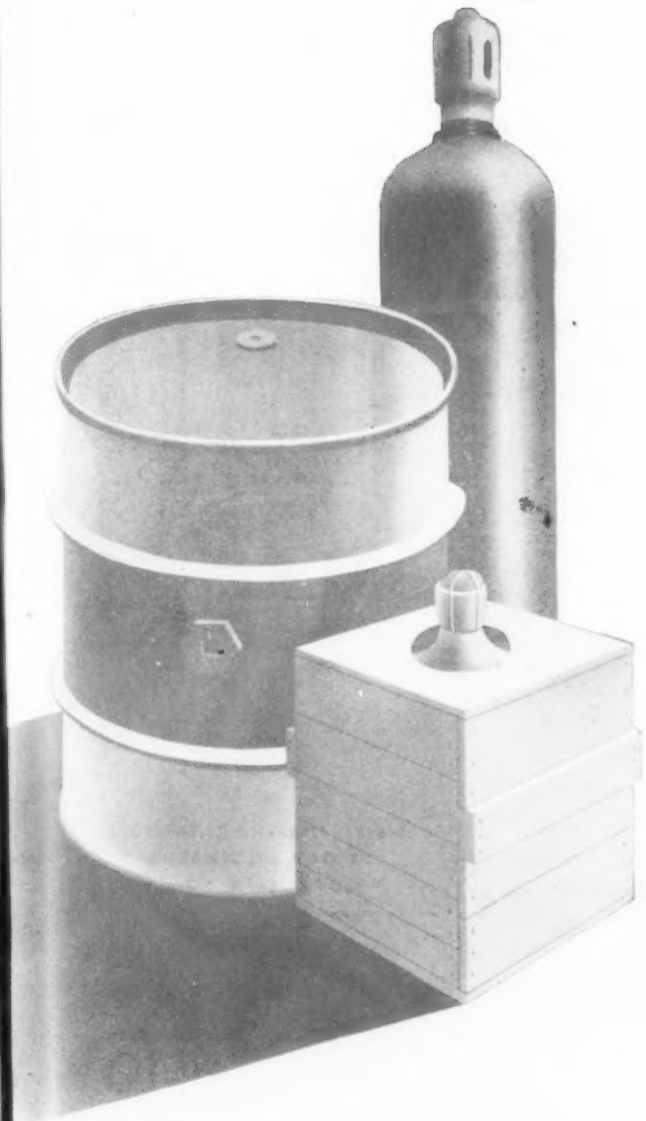
Whatever your problem, "look it up first" in this authoritative compilation of useful data presented for your convenience by the Editors of Textile World.



"The Yearbook with the Orange Band"

CONTAINERS ARE VITAL

✓ handle carefully ✓ return promptly



CONTAINERS today are worth their weight in gold. Every drum, cylinder and carboy must do the work of three or four in peacetime.

YOU can help to keep essential chemical materials moving smoothly and quickly and *assure speedier delivery of your next order* by following these five simple steps:

1. Handle all containers with care.
2. Empty contents as soon as possible.
3. Don't use for other materials... don't even rinse drums and carboys with water.
4. Replace bungs in drums, outlet caps on cylinders, and thoroughly drain carboys.
5. THEN RUSH THEM BACK WHERE THEY CAME FROM!

Every user of chemicals who follows those five suggestions will be helping save materials... and time ...two vital ingredients for victory! MONSANTO CHEMICAL COMPANY, St. Louis, Missouri and Everett Station, Boston, Massachusetts.

"E" FOR EXCELLENCE—The Army-Navy "E" burgee, "representing recognition by both the Army and the Navy of especially meritorious production of war materials," has been awarded to Monsanto and replaces the Navy "E" first awarded Monsanto December 31, 1941.

MONSANTO CHEMICALS

SERVING INDUSTRY...WHICH SERVES MANKIND

A THIRD OF A CENTURY of INTERCHANGEABILITY

DURING all the years since NORMA-HOFFMANN Ball Bearings were introduced, PRECISION has been their distinguishing feature.

"But"—we are often asked—"has this PRECISION been unvarying, over all these years?"

An actual test of the INTERCHANGEABILITY maintained in day-after-day, year-after-year NORMA-HOFFMANN production would (we believed) give a convincing answer to the question—since, in the bearing world, INTERCHANGEABILITY of parts cannot be realized unless PRECISION is maintained.

So we secured a number of stock NORMA-HOFFMANN Open Type Ball Bearings—some made 30-odd years ago, others at intervals since. These we dis-assembled and "mixed up"—interchanged inner rings, cages with balls, and outer rings—and reassembled them into complete bearings which were then subjected to our rigid PRECISION tests.

In every case, we found the reassembled unit to be a true NORMA-HOFFMANN PRECISION Ball Bearing, with internal accuracy unchanged and in every respect conforming to our exacting standards.

This is NORMA-HOFFMANN PRECISION—not new or variable or "special"—but a time-tested, inflexible standard of quality, This PRECISION is YOUR assurance of bearing speed-ability and service-ability—YOUR safeguard against bearing troubles.

•

WRITE FOR THE CATALOG
LET OUR ENGINEERS
WORK WITH YOU

•

NORMA-HOFFMANN PRECISION BEARINGS

• • • •

BALL • • ROLLER • • THRUST
for
EVERY LOAD, SPEED AND DUTY

NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN. . . . FOUNDED 1911

P is for PRIORITIES...

the "quality or status of taking precedence," is Mr. Webster's way of saying "*first things first.*" However,

P also stands for PROGRESS...

defined here at Cyanamid in terms of chemical advancement and contributions to users of chemicals in industry. Priorities, therefore, and all the necessary limitations these must continue to imply become a patriotic challenge to our resource, experience and ingenuity to help relieve critical shortages of essential chemicals.

As a result, new Cyanamid developments have been coordinated with rapidly expanding capacities for greater production for the war effort. Other timely developments are serving to keep the wheels of many civilian industries turning. Among the latter are new formulations that may not only meet your immediate production needs, but which are likely to have far-reaching advantages beyond the present emergency. Write to Cyanamid for details.

AMERICAN CYANAMID & CHEMICAL CORPORATION

A Unit of American Cyanamid Company · 30 ROCKEFELLER PLAZA, NEW YORK, N. Y.

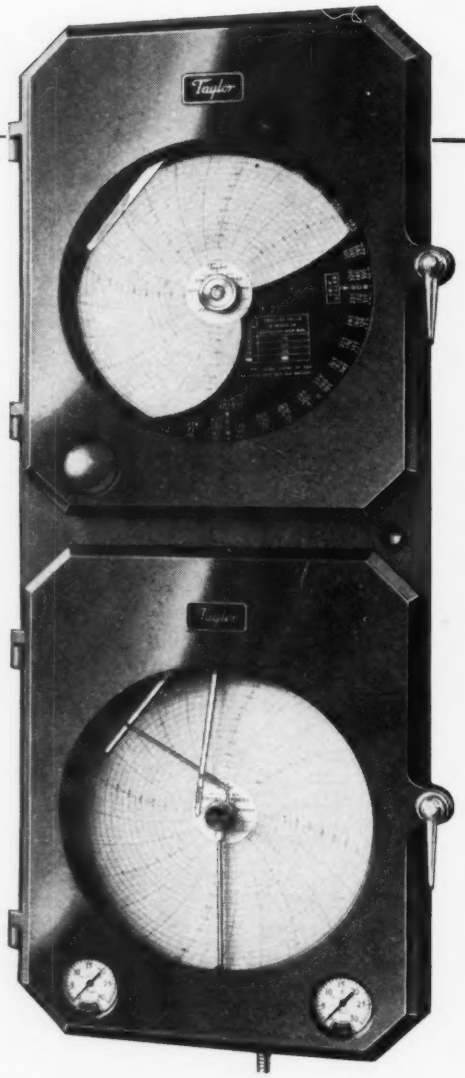
MANUFACTURERS OF

Sulphonated Oils · Penetrants · Finishes · Softeners · Sizing Compounds · Decceresol* Wetting Agents · and other specialties for the Textile Industry

***Reg. U. S. Pat. Off.*

YOU PUSH THE BUTTON...

Taylor Time-Schedule Controller does the rest!



THIS new Taylor development was practically made to order for size-cooking control! Today, with shortages on every hand, it's more important than ever to have the size-cooking operation go off like clockwork. With Taylor FULSCOPE Time-Schedule Controllers, once you have the ideal cooking schedule, you can reproduce it *every time*, with automatic control of time and temperature. No over-boiling. No over-flowing. All you do is load the kettle and push the button . . . and the Taylor Time Schedule Controller does the rest!

The Taylor Time-Schedule Controller gives you many features not found in other instruments. Its dual case construction permits easy accessibility to both control mechanism and cam and trip mechanisms. Its many auxiliary functions make it easy to add extra processing steps. It is available also in double-duty form for control of two related temperatures, pressures, or flows.

Your Taylor Field Engineer can give you the full story. More than that, he can analyze your particular conditions and help you set up exactly the schedule you need for best results. Taylor Instrument Companies, Rochester, N.Y., and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

Taylor Instruments

MEAN

ACCURACY FIRST

IN HOME AND INDUSTRY

★ ★ ★ KEEP ON BUYING ★ ★ ★
U. S. WAR SAVINGS BONDS AND STAMPS

You Miss

a youthful face, and suddenly realize that perhaps by now it is in Iceland or Australia, or in Alaska or England or New Zealand.

Men whom many of us only yesterday still thought of as boys, are today fighting the nation's battles the world over, gallantly and well.

With them it isn't "business as usual".

Nor is it with us, who know that their lives imperatively depend on an adequate supply of rubber products.

Nor is it with the distributor and dealer, thus deprived of one of the lines which was fundamental to their business.

We regret more than we can express our inability to supply products for civilian needs to the same extent as formerly. However, once we are free to pursue our normal peacetime course, we shall again be ready to serve you as we have for more than 60 years.

BOSTON WOVEN HOSE AND RUBBER COMPANY

BWH

WORKS: CAMBRIDGE, MASS., U. S. A.
P. O. BOX 1071, BOSTON, MASS., U. S. A.

What YOU Can Do About Scrap

EXECUTIVE:

Appoint a scrap director, armed with authority to act. Promote the use of posters, pay-envelope stuffers, and collection goals to enlist employees in the scrap campaign.

Make each foreman responsible for preventing waste in his department.

Enforce monthly rechecks in every department to find scrap material previously overlooked.

Report regularly on your plant's collection of scrap to the Industrial Salvage Committee set up by WPB in your community.

•

SUPERINTENDENT, FOREMAN, OR TECHNICIAN:

Survey all plant equipment, particularly idle, broken, or obsolete machines, and determine what might be salvaged, and what should be scrapped. Remember, any machine is more valuable repaired than scrapped.

Classify all scrap metal by its alloy content.

Provide separate containers, clearly marked for each class of scrap material.

Speed the return of scrap to steel mills through existing channels.

•

WORKMAN:

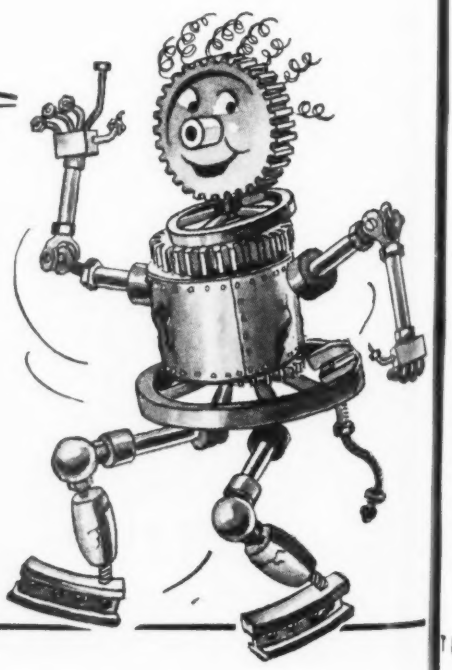
Comb plant and yards for dormant scrap and unusable and abandoned equipment.

Report promptly the equipment which is out of use. If equipment has not been used for some time, and you see no use for it in the near future, transfer it to where it can be used, or scrap it.

Salvage usable parts from equipment marked for scrapping.

SCRAPPY SAYS:

Yes sir, we've got to have scrap. It takes scrap to make steel. And it takes lots of steel to win a war. DO YOUR PART!



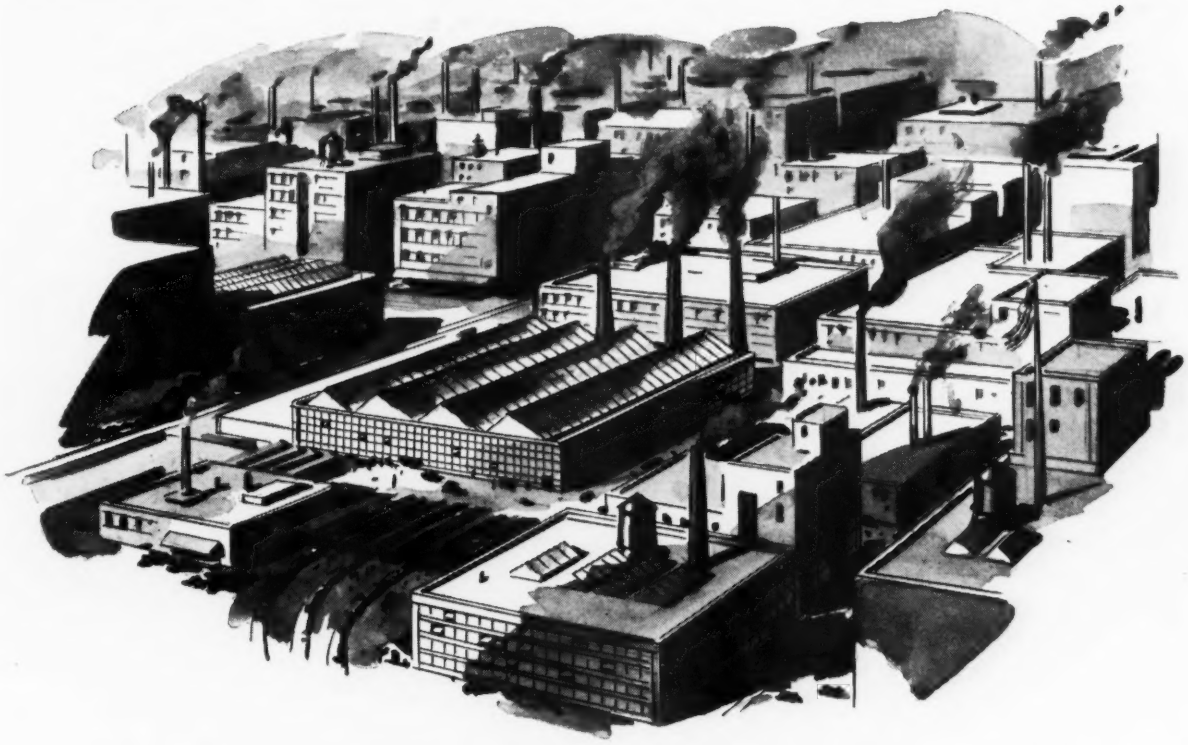
ELECTRO METALLURGICAL COMPANY

Unit of Union Carbide and Carbon Corporation

30 East 42nd Street UCC **New York, N. Y.**

Electromet
Trade Mark
Ferro-Alloys & Metals

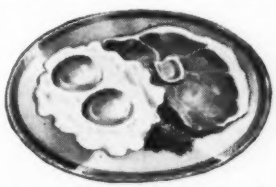
How Hundreds of Vital War Plants Have Guarded Against Roof Repair Expense



CELOTEX BONDED BUILT-UP ROOFS . . . are Covered by Written Surety Bond for Periods of 10, 15, or 20 Years!

CELOTEX BONDED Built-Up Roofs are well known to industry. They meet Celotex world-famous standards of quality in every respect. That is why they have been chosen to guard vital war plants in all parts of America.

Celotex Bonded Built-Up Roofs are available with 10, 15, or 20-year bond. This bond is a written guarantee of freedom from repair expense for a definite period of years . . . additional assurance, over and above the quality reputation of Celotex Products and the ability and experience of every contractor licensed to apply those products.



"GO TOGETHER LIKE HAM AND EGGS"

Before you sign a contract, investigate the advantages of using Celotex Vapor-seal Roof Insulation in combination with a Celotex Bonded Built-Up Roof. They go together like ham and eggs—give you the benefit of undivided responsibility—because the same responsible manufacturer produces both. Write for complete information!

CELOTEX

REG. U. S. PAT. OFF.

ROOFING • INSULATING BOARD
ROCK WOOL • GYPSUM WALLBOARD • LATH
PLASTER • ACOUSTICAL PRODUCTS

THE CELOTEX CORPORATION • CHICAGO

TW 2-43

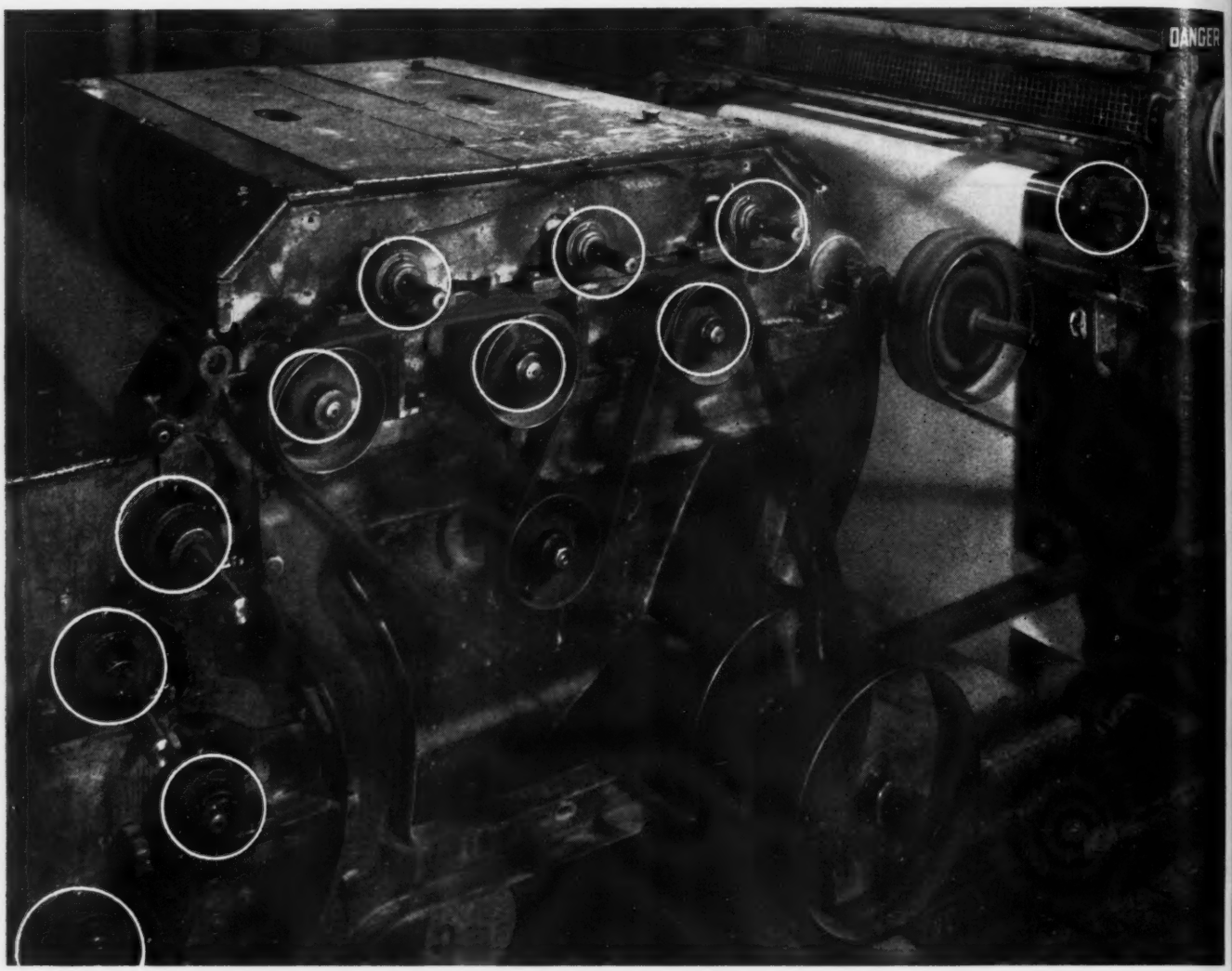
THE CELOTEX CORPORATION, CHICAGO

Please send complete information on Celotex Bonded Built-Up Roofs and Celotex Vapor-seal Roof Insulation.

Name _____

Address _____

City _____ *State* _____



Twin Trouble-makers . . . Now Harmless

Self-Aligning, Clean-running Fafnirs Offset Expansion and Contraction of High-speed Shafts . . . eliminate Oil-spattered Cloth

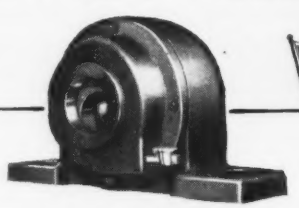
SPEED was one of the problems in this Cotton Mill working on war orders. They had to meet close production schedules . . . machines had to run "lickety-split" to keep up the pace. Due to high speeds and attendant heat conditions, oil or grease just wouldn't stay in plain bearings . . . and it damaged many yards of cloth.

EXPANSION and CONTRACTION of high-speed shafts was another headache. A shaft out of line, or a bearing out of line . . . caused trouble. Under such conditions, any but the right type of bearing would have a very short life. When one bearing failed, production had to stop . . . and wait!

A Fafnir Engineer suggested Fafnir SAOL Type, Self-aligning Pillow Blocks as the solution for both problems!

The Fafnirs went in . . . *on trial.* Now . . . after more than 12 months on the job, the Fafnirs have proved themselves. They stand up under considerably greater speeds and loads than had hitherto been practical. Oil damage to cloth has been entirely eliminated.

The Fafnir Ball Bearing Units that answered the needs of this mill are the result of Fafnir's engineering thoroughness. In the Textile Industry, as in other industries, Fafnir has made a careful study of the bearing problems of every type of machinery and equipment used. The resulting line of Fafnir Ball Bearings increases the efficiency of machines and equipment, cuts maintenance costs, and saves power consumption. The Fafnir Bearing Company, New Britain, Conn. Branch Offices: Atlanta . . . Birmingham . . . Boston . . . Charlotte . . . Dallas.



FAFNIR

BALL BEARINGS

THE BALANCED LINE - FOR ORDNANCE, AIRCRAFT AND INDUSTRIAL MACHINERY

American Beauties... Every woman knows that the clear, even texture of her stockings stands for beauty—American style. Every hosiery manufacturer knows that only the finest of needles can give superior knitting results. Keep your knitting machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

"Make much of what you have.

CLARKE

The War Flags of TMW include: Army-Navy "E" awarded November 3, 1942; All-Navy "E" Burgee awarded May 18, 1942; Navy "E" Pennant awarded July 25, 1941.

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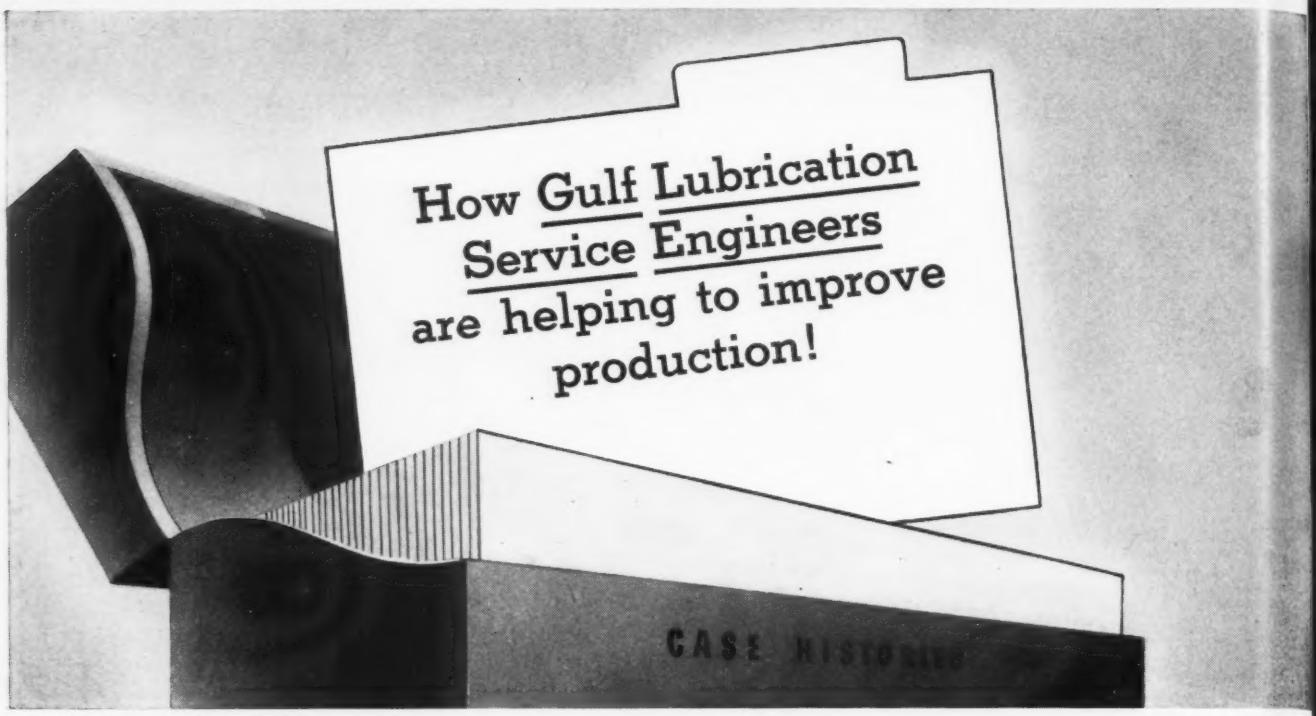

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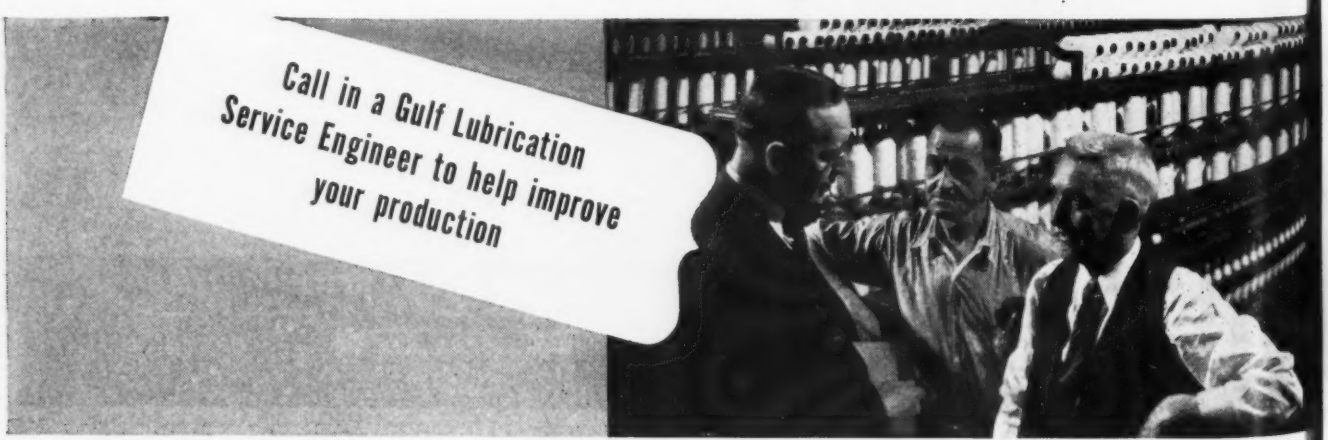

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Textile World

FEBRUARY, 1943 • VOLUME 93 • NUMBER 2

A McGRAW-HILL PUBLICATION

TEXTILE WORLD (formerly *Textile World Journal*) with which are combined *Textiles, Posselt's Textile Journal* and *Textile Advance News*. Published monthly. United States and Possessions and Latin American Republics, $1.50 a year; Canada and all other countries, $2, U. S. currency or 12 shillings. Single copy 25c. Annual index in "Textile World Yearbook & Catalog."

Of this issue 14,141 copies were printed

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AMONG THE OUTSTANDING feature articles tentatively scheduled for our March issue are Part II of the Manual of Military Fabrics describing in detail the manufacture and processing of one type of cotton fabric now being procured in large quantities by the Philadelphia Quartermaster Depot; two particularly timely articles, one on card room jobs for women and the other on maintenance of spinning frames; two particularly important articles dealing with the textile industry's part in the war effort are one on fireproofing military fabrics and another on finishing Marine suitings. Of growing importance is the use of electronic devices of various types in industry; a recognized authority on the subject contributes an article describing present applications of electronics in the textile industry. Washington developments will be fully covered.

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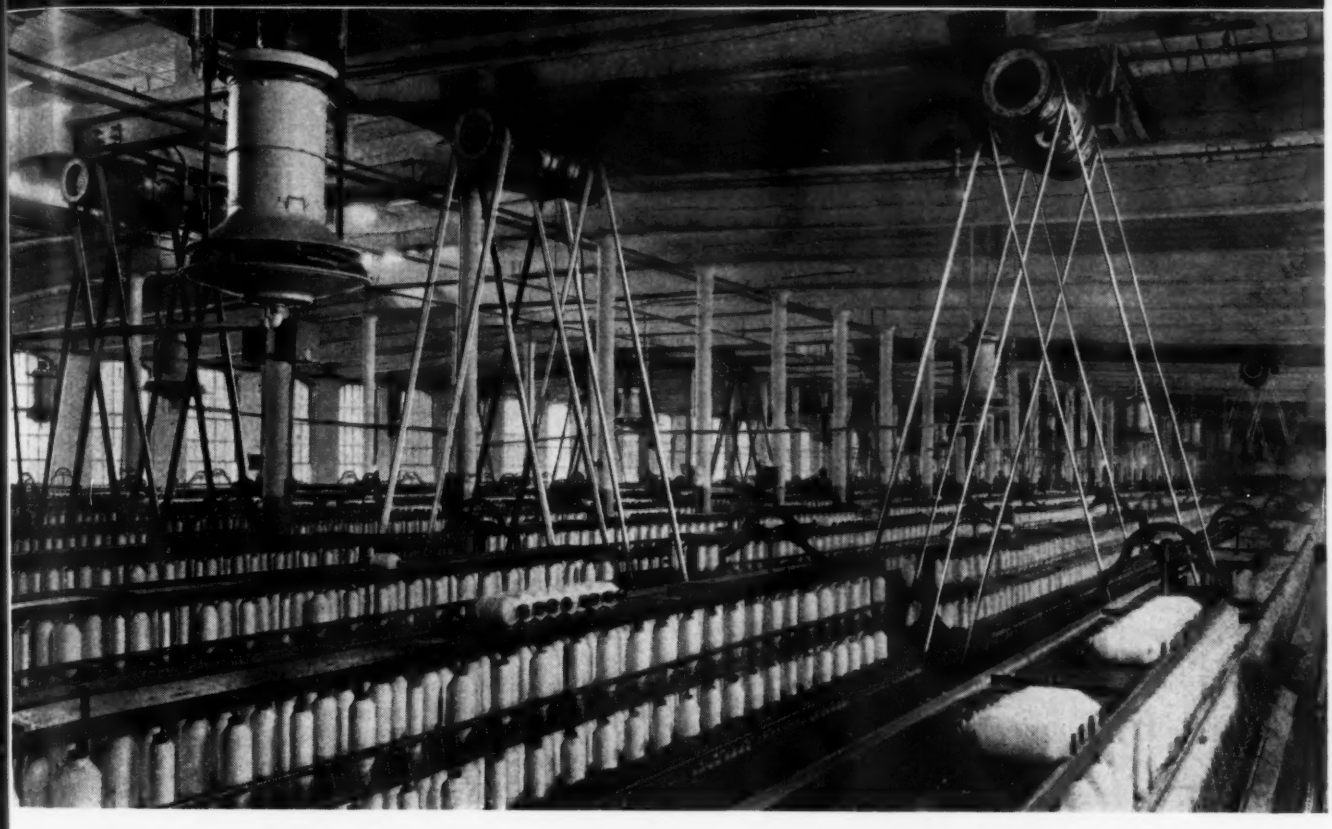

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FOR THE TEXTILE INDUSTRY

TUNE IN FRED ALLEN EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

Mining—Number One War Industry

The mineral products of the earth are the prime necessities of war... and peace

THE SURFACE of the earth provided primitive man with the things he needed for his meager existence but civilization really began when he became curious about its interior. This curiosity has brought us a long way. For the earth has yielded — out of its deep recesses — all the raw materials of modern industry. And today, in the grueling race of production, our mining industry is providing the raw materials upon which depends our survival. Our mines and quarries must supply a long list of materials without which a successful war cannot be fought.

Take steel, for example. War without steel is inconceivable. Steel starts with iron ore, limestone and coke. These are products of mines and quarries. It takes power and heat to get these materials out of the ground, to refine them and to transport them to the point where processing begins. All the subsequent operations culminating in the steel ingot, shape or plate, and in moving the final product to the point of use require power and heat.

The major source of this power and heat is coal.

Production of a ton of steel, it has been stated, requires two tons of coal. Smelting of the pig iron alone, 60,000,000 tons in 1942, required the coking of some 75,000,000 tons of coal. Pig output is expected to rise to 68,000,000-70,000,000 tons in 1943, carrying coal consumption up to 85,000,000 tons. At the same time, output of steel ingots is expected to rise from 87,000,000 to 97,000,000 tons. Think what this means in terms of power and heat.

Another vital metal is copper. Modern armies need copper. This point is dramatically illustrated in a recent memorandum by Robert P. Patterson, Under Secretary of War, in announcing the release of 4,000 men from military service to return to the mines and increase copper production. "In a single minute of combat", Mr. Patterson declared, "a flight of 50 fighter planes shoots away 7 tons of copper. A 37-mm. anti-aircraft gun uses up a ton of copper every twenty minutes it is in operation. Six hundred pounds of copper go into every medium tank, and a ton into the engines and airframe of a Flying Fortress. The Signal Corps alone needs 5,000 tons of copper every month for radio and telegraphic and telephonic equipment. An army without copper would be an army without speed, maneuverability or firepower. It would not last a day in battle".

Seven tons of copper for one minute of combat by 50 fighter planes means from 200 to 700 tons of ore, depending upon its grade. Small wonder that the War Department was willing to release drafted miners from military duties to produce more copper.

But other metals are equally important in war: tungsten, nickel, manganese, chromium, vanadium and molybdenum for alloy steels; zinc for brass and die castings; tin for bronze and bearings; aluminum and magnesium for aircraft; lead and mercury for ammunition; silver for electrical equipment, bearings and solder, and so on. Even relatively insignificant non-metallics, like mica and diamonds, suddenly assume critical importance.

And let us not lose sight of the fact that without adequate energy, i.e., heat and power, production, processing, transportation and the relative comforts to which we have become accustomed would be impossible under war conditions. Coal is the major source of energy in the United States. It supplies more than half the total in normal years.

The railroads of the country alone used 110,000,000 tons in 1942 to move freight and passengers and service their facilities. Utilities consumed over 68,000,000 tons in the production of electric power. Over 135,000,000 tons of coal were consumed last year in maintaining the level of heating comfort necessary for the maintenance of efficiency and morale. The consumption, this year, will be even greater.

In short, the mineral products of the earth are the prime necessities of war.

The nations that control the world's mineral resources and make the most efficient use of them will win the victory.

Before the war, the British Empire and the United States together controlled probably 75 per cent of the world's mineral production. This would have been a most potent weapon in the United Nations' arsenal if the whole strategy of Axis expansion had not been influenced by mineral objectives. Addressing the American Zinc Institute on the subject last April, E. W. Pehrson, of the U. S. Bureau of Mines, estimated that the Axis had improved its position in world mineral resources in the following percentages: iron ore, from 6 to 46; steel production capacity, 20 to 34; petroleum, 1 to 7; coal, 27 to 53; copper, 5 to 10; lead, 7 to 22; zinc, 16 to 27; tin, 1 to 72; manganese, 2 to 30; chrome, 3 to 30; tungsten, 6 to 60. In the light metals, areas now Axis-controlled produced in 1940 54 per cent of the world's aluminum, 49 per cent of the bauxite (the principal source of aluminum) and two-thirds of the magnesium.

This is the eighth of a series of editorials appearing monthly in all McGraw-Hill publications, reaching more than one and one-half million readers, and in daily newspapers in New York, Chicago and Washington, D. C. They are dedicated to the purpose of telling the part that each industry is playing in the war effort and of informing the public on the magnificent war-production accomplishments of America's industries.

Despite these gains, the industrial war power of the United Nations still can outweigh that of the Axis by a considerable margin. It already has begun to surpass it. The problem is to convert quickly our potential mineral resources into implements of war. In this conversion, a heavy burden of responsibility has been placed on the mining industry of the United States as the largest producer of many metals, minerals and fuels. In fact, the United States mining industry began to go on a war basis a year before Pearl Harbor. The curves of demand for domestic copper, lead, zinc and other metals began to rise sharply in 1940, and were paralleled by a rising coal production.

How well the job has been done cannot be revealed in accurate figures in many cases because of censorship. In metals, however, some idea of production gains can be indicated in comparative terms. United States copper production, for example, is breaking all previous records. Aluminum capacity will be more than seven times its annual peace-time average. Magnesium plants now building will have a capacity 100 times the largest yearly before-the-war figure. Molybdenum, of which the United States has the largest single mine in the world, is being made available in record quantity. Zinc, lead and mercury are surpassing expectations in meeting wartime demands, and tungsten, chromium, manganese, antimony and iron and steel are being turned out in record-breaking quantities.

Bituminous coal production in 1942 was 580,000,000 tons, the greatest in history, valued at more than $1,300,000,000 at the mine. Some 430,000 or more men were employed in 1942 and received at least $750,000,000 in wages. Bituminous production in 1939 was 394,855,000 tons, while the output for 1943 is forecast at approximately 600,000,000 tons — another new United States record. The 1942 anthracite output was 59,961,000 tons, valued at over $270,000,000 at the mine. The industry employed some 85,000 men and paid out at least $180,000,000 in wages. The 1939 production of anthracite was 51,487,000 tons, and the forecast for 1943 is 65,000,000 tons or more.

Marshalling the Western Hemisphere's mineral resources, the United Nations have been the beneficiaries of the diversified resources of two continents — in particular of Canada's nickel and coal, Mexico's lead and antimony, Chile's copper, Bolivia's tin, Peru's vanadium, Brazil's iron, and Venezuela's petroleum. With other United Nations contributing their share of metals and fuel, the grand total is an impressive array of potential munitions and matériel to lend assurance of certain victory over the Axis. Sheer weight of metal, properly used, will win the war, and our mineral industry will have played an indispensable and essential part in the inevitable outcome.

James H. McGraw, Jr.

President, McGraw-Hill Publishing Company, Inc.

Textile World
ANNUAL REVIEW AND FORECAST SECTION

Fourth Record Down, Fifth to Go

By DOUGLAS G. WOOLF

Lend-Lease looms as cause of another textile production miracle in 1943 ★ ★ ★ ★

THE IMPULSE is to say: Textile production set its fourth successive annual record in 1942, *period*. By all the rules of the game, that should be its last record-breaking year for a while; the unprecedented run should be interrupted in 1943. Military demands have already shown signs of letting up on certain fabrics; civilian output will be more and more curtailed.

But something new has been added: Lend-Lease. That is the X in the 1943 textile production figure. And from talk in Washington, it is not altogether an unknown quantity. There is discussion of a requirement of two billion yards of textiles for Lend-Lease in 1943, of which a considerable portion would be coarse cotton goods.

And so the period becomes a semicolon. Anything may happen. The best hunch, revised via the Lend-Lease factor, is that 1943 will at least equal the record of 1942, and possibly set a new one of its own.

How that is to be accomplished is a many-angled problem. Raw material is not one of the sharp angles. There will be enough fiber of all sorts, including waste, available for another record year. Manpower *is* a problem. So is the wear and tear on machinery in place, due to the beating it has been taking during the last four record-breaking years, and the impossibility of securing adequate replacements. So is the tight spot in repair and maintenance parts, probably the greatest bottle-neck of all.

But the industry has performed miracles in the last few years; it can keep on performing them. If the Lend-Lease program materializes on currently projected lines, there will *have* to be another such miracle.

THE ACCOMPLISHMENT of the last four years can be visualized from Chart I. From the start of the national defense program in 1939 to date, there has been an uninterrupted rise in textile activity. The fact that the increase in 1942 over 1941 was so slight (only 5½%) was due partly to the fact that the industry had been pushed nearly to its limit in the latter part of 1941 so far as production of military and essential civilian goods was concerned, and also to the fact that producers of non-essential goods had raw-material trouble. Both these considerations will also prevail in 1943, and will tend to keep the production increase, if any, within modest bounds. Obviously, if Lend-Lease is to assume the proportions now indicated, the outlook for the consumer is not too bright. As stated previously in these columns, he or she faces no textile famine, but does face increasing shortages in specific types of fabrics and apparel.

The net result of last year's continued rise was to push TEXTILE WORLD's index of textile mill activity to 198 (on the basis of 1923-25 as 100)—compared with 188 in 1941, 142 in 1940, 132 in 1939, and 103 in 1938! (See Table I on next page.)

By individual fibers, cotton consumption in 1942 increased 8% over 1941; wool was off 7%, due merely to restricted allotments of the fiber to mills, and not to any lack of demand for wool products; and rayon, including both filament and staple, increased 5%. The consumption of both cotton and rayon set new all-time highs in

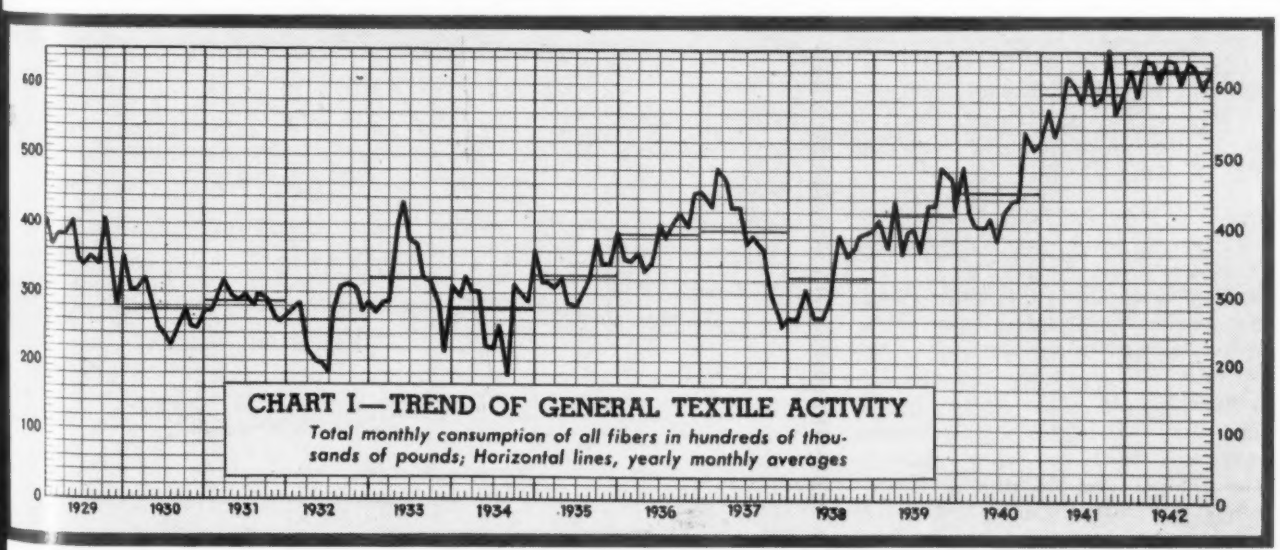


CHART I—TREND OF GENERAL TEXTILE ACTIVITY

Total monthly consumption of all fibers in hundreds of thousands of pounds; Horizontal lines, yearly monthly averages

1942. Silk went out the window. (See Chart II.)

Where Do We Go From Here?

THE TEXTILE PATTERN of the future is beginning to be recognizable. For the remaining war years, which means at least 1943 and 1944, there will continue to be heavy demands for military fabrics and for industrial fabrics, with intermittent let-ups as the supply of one fabric or another gets temporarily out of balance. There will be, as noted, increasing strain on civilian supply. The attempts to relieve that strain will take the form, at the start, of a program of simplification, which will become more and more severe as time goes on. Numbers of types and styles of goods will be reduced sharply, by order. The next logical step would be the development of utility fabrics and clothing, such as they have developed in England. The third step, if the situation became critical enough, would be the concentration of textile production in nucleus plants, also as per English experiment. The latter step is not generally regarded as likely—but anything can happen here, as well as anywhere else in the world these days.

As an accompaniment to this ever-increasing severity of restrictions upon the industry, there will be heavier and heavier taxes, and more and more difficulty in securing manpower, materials, and repair and maintenance parts.

That then is the textile pattern for the balance of the war. Not a lush prospect, nor a soft one, but this is total war! And the textile industry is among the most fortunately placed of all industries. Its "conversion" has been largely to other phases of its peacetime job. It is still serving its old customers, as well as Uncle Sam. Compare that with the automobile industry, or the electric refrigerator industry, to cite just two examples, and see how well off it is.

THE POST-WAR PATTERN is also becoming clearer. Lend-Lease developments demonstrate that, starting this year and continuing on after the war, we are going to be the Clothing Depot of the World, as well as the Arsenal of Democracy. We are going to clothe the denuded peoples of our Allies, of occupied nations, and probably of any other countries which may need clothing. The job will be stupendous. Fortunately we shall have a production machine geared up to a new level of efficiency. The job of re-conversion, as indicated above, will be a minor one in textiles as compared with most other industries. There should be no shock in textiles at the termination of the war. The industry should be able to swing over to its new role with little difficulty. Lend-Lease and similar trends point the way to the postwar cushion which textile manufacturers have been worrying about. Furthermore, this time we are not likely to disarm; the Government will continue to be a good customer.

Looked at that way, the post-war picture looks rosy. Certainly, the demand for textiles will exist all over the world. But this must be recalled: After the last war, we had just such a combination of circumstances—unlimited need for textiles and unprecedented productive capacity. For a short while, the two clicked, and we had a few golden years. Then the whole business bogged down; textile production was a glut on the market; and the textile industry was noted as one of the two sick industries in the pre-1929 period when most American businesses were going through the roof.

What happened? Did the demand dry up? No, the world still needed textiles. But the distributive machinery failed to function; the textile depression in the 20's was a pre-view of the general depression after 1929. The same basis was there in both cases: a great demand for goods, and for a better standard of living, all over the world; the plant capacity to produce all these needs; and yet the complete inability to mesh the two. What was true in industry was true in agriculture. Starvation in the midst of plenty. Pigs killed, cotton plowed under, coffee burned, while millions of people suffered from want and from exposure throughout the world.

When post-war planners get together, that is the picture they must keep in mind. They do not need to be fright-

TABLE I

TEXTILE WORLD'S Textile Mill Activity Index

1923–25 average = 100

1929	115	1936	124
1930	89	1937	125
1931	93	1938	103
1932	83	1939	132
1933	104	1940	142
1934	90	1941	188
1935	105	1942	198

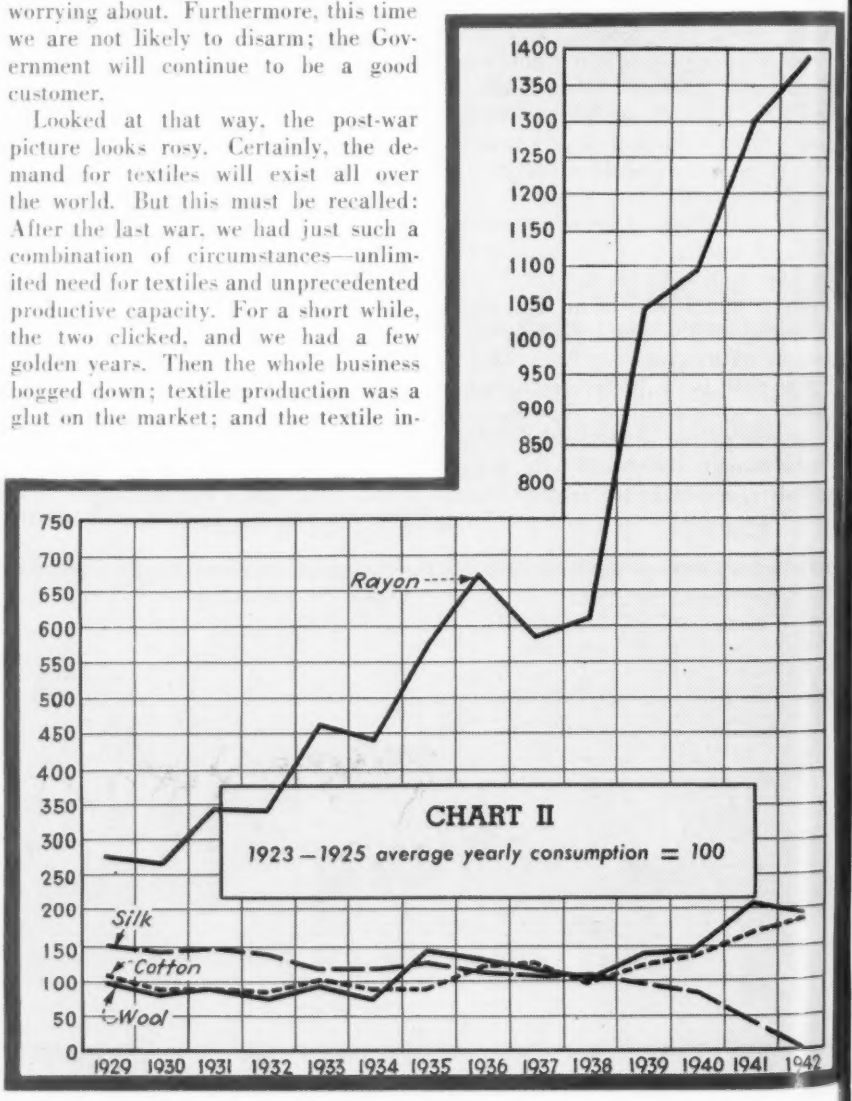


CHART II

1923—1925 average yearly consumption = 100

ened by it. Just because it happened that way last time is no reason why it has to happen that way this time. *But*, it will if something isn't done about it. Inflation followed by depression has been the normal post-war pattern in history. To avert it will take conscious effort and planning.

Such planning must not be confined solely to committees and foundations and associations and Government. Each company should be making its own post-war plans now, and should be starting to put them into effect now. It should be going over its products with a completely open mind, deciding which ones should go out the window, which ones should be changed, what new ones should be added. It should be going over its production methods with a completely open mind, keeping alert to the basic trends in fibers and types of equipment which the future positively holds in store. It should be going over its merchandising practices with a completely open mind, remembering that one of the main troubles of the textile industry has been in the distribution of its products. It should be going over its personnel problems with a completely open mind, in the conviction that labor relationships are now in the process of a fundamental change, and that the old type of employer-employee relations is on its way out.

"A completely open mind!" That should be the motto for the industry and the individual. The world has been and still is going through a revolution. It is completely impossible to turn the world upside down in global war—and then, after the peace, to resume old ways, to go back to being the same old world.

Everything will undergo change—every economic, technical, and sociological aspect. It won't be a question of whether the individual likes this innovation or that. He won't be able to set the clock back. The idea of talking about status quo just because we like status quo, is silly. Status quo has gone, never to return.

A new world is in the making. It can be a better world, if we think of the future, rather than living in the past.

War Work Drops Machine Sales

FOR THE FIRST TIME since 1938 TEXTILE WORLD's machinery sales index took a drop—and for the first time in our memory, the manufacturers were proud of a sales decline. For it was a service stripe—evidence that the textile machine shops had gone to war.

Actually the drop was much less sharp than might have been anticipated. Our index was 21% below 1941, or 127 on the basis of 1929 as 100. It was still the second best year in our survey. (See Chart III; also Table II on next page.) However, that is only the beginning. Many plants which still had sizable orders for textile equipment on their books at the start of the year, later became largely, or even wholly, converted to war work. This change will show up in the 1943 record. In fact, striking an average of the predictions for this year made by those who contributed to our survey, the expectation for textile machinery and allied sales in 1943 is about 60% less than 1942, which would knock our index down to approximately 75.

It must be emphasized that TEXTILE WORLD's index is based on dollar sales of machinery, accessories, supplies, and auxiliary equipment to textile mills. Obviously, there is wide variation among the different groups, and particularly between that group which sells equipment and that which sells accessories and supplies. The representatives of the latter group reporting to us averaged about the same volume of business in 1942 as in 1941, and their average 1943 prediction is for a continuation of approximately this same volume. On the other hand the machinery manufacturers who participated in our survey reported more than a 25% drop in 1942 from 1941, and predicted a drop of 50% in 1943 from 1942. In effect, the business of supplying firms has been in the process of forced contraction to repair and maintenance parts, accessories, and absolutely essential machines on high priorities.

THE MACHINERY INDUSTRY has accepted the need for this, from a national viewpoint, and has gone readily and efficiently to work making war equipment or parts. Nevertheless, this question is in the minds of many machinery manufacturers, as well as textile manufacturers: How far can we go in denying all machine replacements to mills, without crippling our productive capacity, for both war and post-war needs? It is emphasized that this question would not be a serious one if a short war could be counted upon, but would become extremely critical if the war continued for years.

One of the contributors to our survey raises the question as to the existing need, by textile mills, for machinery and repairs, in relation to the dollar investment on a new machinery basis in their plants. He states:

"The average mill probably pro-

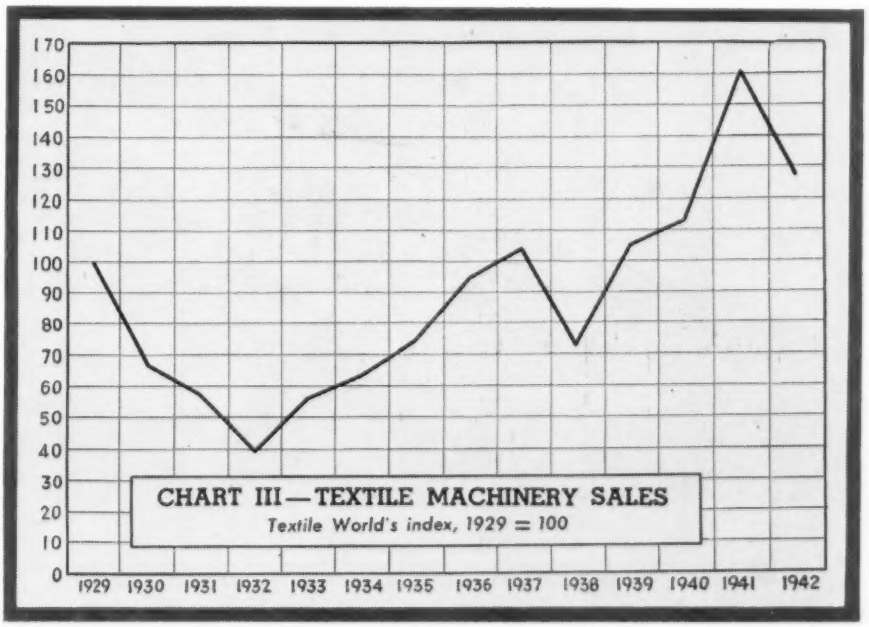


CHART III—TEXTILE MACHINERY SALES
Textile World's index, 1929 = 100

duces in dollar sales anywhere from two to five times the amount that they had invested in textile machinery, on a new basis, and we may assume for example that this is four times as an average; the rate of depreciation in most textile machines runs from 5 to 10% on their machinery, and repair items run anywhere from 1 to 10%, probably an average of 4% would be normal for continuous operation. Hence, if say 6% was devoted to replacements of machinery, i.e. replacing worn-out machinery, and 4% devoted to repairs, a mill normally would spend 10% of its new value of machinery on repair work and machine replacements to keep its plant up-to-date, and at top efficiency.

"Actually a progressive mill would spend a lot more than this, and on the other hand, a recently new mill, or a mill which was ready to go to the junk pile, might spend less.

"However, taking 10% as a fair amount which should be spent on new equipment and repairs, this means that if you take 10% of the new machine value, it is only about 2½% of the yearly sales of the product.

"It is likely that the same factor applies to productive machinery of all kinds, so that it means only a very small percentage of the total productive effort in the United States to keep all manufacturing in 'apple-pie' order, not only for war demand, but for the critical times after the war. This general thought does not seem to have received much attention, and there is a great danger that in an effort to devote every possible bit of steel, and all hours of labor, to the production of war material, the need of keeping plants up-to-date and in good condition may be sidetracked. For a short critical period, it might be for the best interest of the country to hold back on all machine replacements, but if the war runs for several years, and it has already run for over one year, unfortunately the productive efficiency of the country will decline.

TABLE II

TEXTILE WORLD'S Textile Machinery Sales Index

1929 = 100

1929	100	1936	94
1930	67	1937	104
1931	57	1938	73
1932	39	1939	105
1933	56	1940	115
1934	63	1941	161
1935	74	1942	127

"This in itself expresses my opinion about the possibility of textile machinery sales in 1943. It is something wholly under the control of the War Production Board. Apparently they are going to give every consideration to repair items, but are holding back tightly on new machinery."

A similar thought is expressed by another manufacturer, who states:

"The great question in my mind is just how long some of the old machines that are running two and three shifts at high speeds will hang together. We certainly wish it were possible to look into the future even six months ahead and see what the answer is going to be."

Other extracts from the survey follow:

▶ "1943 is a logical period to devote to developments for post-war activity, if one can overcome the lack of development talent (manpower), scarcity of materials and scarcity of available machinery—the war effort must not be interfered with.... 1943 will be a most trying year."

▶ "While we are not optimistic about it, we are looking forward to the possibility of better ratings for textile people. I think I see many indications that we are close to the end of our construction and tooling-up period. While we will need raw materials for war materials, there is a possibility that the end of this cycle will release more raw materials for the textile industry. . . . I am very optimistic about the situation which will follow victory and may it come soon! We are planning for it and we hope to be well prepared for it."

▶ "Present indications point to a tightening up all around, and requests for new machinery will be thoroughly investigated and not approved unless it is absolutely essential and not procurable in the used field.

▶ "Sale of repair parts will no doubt continue heavy throughout the year, probably heavier than in 1942. The sale of new machinery will, we believe, be greatly reduced, as the scarcity of material will continue throughout most of the year. Priorities, of course, will continue in force, as we do not expect to see the war finished this year."

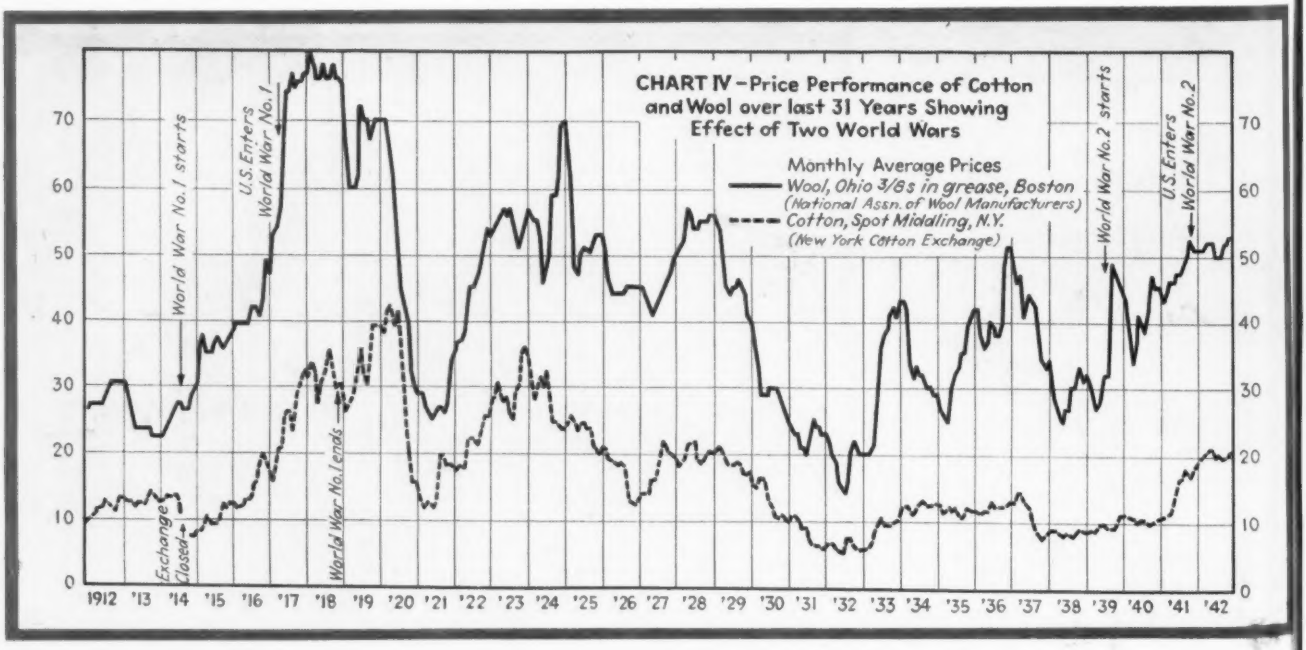


CHART IV – Price Performance of Cotton and Wool over last 31 Years Showing Effect of Two World Wars
Monthly Average Prices
Wool, Ohio 3/8s in grease, Boston (National Assn. of Wool Manufacturers)
Cotton, Spot Middling, N.Y. (New York Cotton Exchange)
World War No. 1 starts
U.S. Enters World War No. 1
Exchange Closed
World War No. 1 ends
World War No. 2 starts
U.S. Enters World War No. 2
0
10
20
30
40
50
60
70
1912 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 '30 '31 '32 '33 '34 '35 '36 '37 '38 '39 '40 '41 '42

War's Impact on Techniques

By WINN W. CHASE
Technical Editor, Textile World

CALLED UPON in 1942 to meet unprecedented demands for its products for use by our armed forces, for Lease-Lend, and for essential civilian purposes, the textile industry has consistently delivered the goods on time or ahead of time. This has been done with practically no expansion of facilities, but has involved the conversion of looms and other equipment from production of peacetime to wartime fabrics. Scarcity of some types of dyes, chemicals, fibers, and other materials has been counteracted by use of substitutes. Many new and improved fabrics and finishes have been developed to meet specific needs. Textile research has been accelerated to war tempo. Mill maintenance has been geared to two- and three-shift operation. Steps have been taken to protect plants against damage by bombs or sabotage. Safety and morale-building programs have been stepped up. More effective methods have been adopted for training workers for new jobs. Some post-war planning has been started.

Conversion to War Work

THAT DEMAND for certain types of textiles for military use would far exceed the capacity of the regular manufacturers of those products became apparent soon after Pearl Harbor. Cotton ducks, osnaburgs, Army blankets, parachute cloth, mosquito netting, and elastic and non-elastic narrow webbing were among the materials needed urgently in larger quantities than could be furnished by the usual suppliers. Textile manufacturers who had had no previous experience in making these particular types of textiles were eager to serve during the emergency by converting their looms and other equipment to production of these fabrics. In some instances conversion was possible with little or no difficulty; in others, numerous problems were involved. Where there were serious conversion problems, their solution was hastened by a degree of cooperation unparalleled in the textile industry.

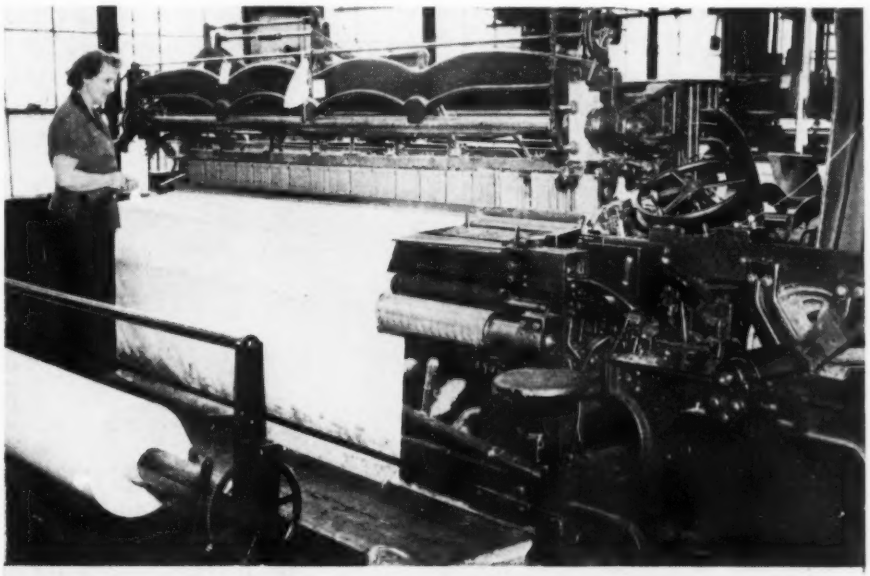
Take, for example, the manufacture of cotton duck. In our February, 1942, issue we were able, through the cooperation of one of the leading duck manufacturers, to present an article dealing in considerable detail with the weaving of No. 6 duck and shelter tent duck. Accompanying the article was a statement that the executives of that company had volunteered to supply answers to any inquiries on manufacturing details needed by prospective bidders on contracts for duck. On March 18 a forum on manufacture of duck was held in Philadelphia under sponsorship of Philadelphia Textile Institute and the Philadelphia Textile Manufacturers Association.

At the forum executives of three duck companies and two loom builders explained in detail the manufacture of cotton duck and the conversion of plush, carpet, and other looms to weaving of duck. A report of this forum plus additional data furnished by the loom builders appeared in our April issue. Reprints of this article, together with copies of a stenographic report of the forum, were mailed by Philadelphia Textile Institute to several hundred textile mills.

On April 22 a second forum, this one arranged by the Institute of Carpet Manufacturers of America, was held at the plant of Alexander Smith & Sons Carpet Co. Carpet manufacturers attending that forum made a tour of the plant and observed the changes and adjustments which the company had made in velvet, tapestry, and axminster looms to permit weaving of numbered ducks ranging from No. 2 to No. 10 and special axminster fabrics which correspond to numbered ducks in weight and construction. The methods employed by Alexander Smith were described and illustrated in our May and June issues, and reprints of these articles were distributed to other carpet manufacturers.

Similarly, other groups of textile manufacturers have pooled their information on production of Army blankets, parachute cloth, and other military fabrics. Machinery builders and dye and chemical companies have contributed their time and knowledge. The Army and Navy have cooperated by explaining their needs and by revising specifications whenever necessary and advisable. Textile trade associations and textile schools have been active in bringing interested groups together.

Textile machinery manufacturers during the last year performed the Herculean task of converting a large part of their facilities to production of implements of war. At the same time, they continued to supply textile mills with repair parts necessary for uninterrupted operations. Also they were



Converted axminster loom weaving cotton fabric which corresponds to numbered duck in weight and construction.

able to furnish some new equipment needed by mills working on Government contracts. A few new types of textile machinery have been introduced, but such developments are now practically at a standstill for the duration.

Full-Fashioned Knitters Turn to Rayon

HIT HARDEST of any branch of the textile industry by the war was the full-fashioned hosiery division. Not equipped to manufacture any types of textiles for military purposes, deprived first of silk and then of Nylon, the full-fashioned hosiery mills faced the problem of using rayon and cotton yarns. With rayon, particularly, there were many technical difficulties to be overcome in order to produce serviceable hosiery of good appearance. By the middle of the year improvements which had already been made and others which could be foreseen in rayon yarn, in throwing and knitting techniques, and in dyeing and finishing procedures gave promise that rayon full-fashioned is here to stay and will not be entirely superseded by Nylon or similar synthetics when they are again available for civilian purposes. Notable among the developments in production of rayon hosiery have been the selection of proper sizes and twists of yarn for various constructions, introduction of new sizing materials for use in throwing which help control twist, improvement in hosiery constructions, and adaptation of the preboarding operation to hosiery knit from acetate rayon.

Synthetics Prove Versatility

A FASCINATING STORY, but one that cannot yet be told in detail, is that of the adaptation of rayon, Nylon, and other synthetics to military purposes. Today perhaps 25 to 30% of the production of continuous-filament rayon is being employed in making tire cords, parachutes, shroud lines, tow targets, and other military items. For a year the entire output of Nylon has been restricted to military uses. Fiberglas and other synthetics are finding increased application in special-purpose fabrics and other items required by our armed forces.

For civilian purposes, rayon has not only saved the full-fashioned hosiery industry from virtual extinction, but also has continued to serve in other ways. Shortage of yarns in the finer deniers called for changes in fabric constructions. Blends of rayon staple with natural fibers and other synthetics have assumed greater importance. Growing interest is being displayed in so-called "tow conversion" methods of producing spun rayon yarns. A short-cut in production of continuous-filament yarn is that of supplying the yarn in "cake" form.

Output of casein fiber has been stepped up during the last year, and many new textile applications have been found for this material. Production of soybean fibers emerged from the experimental to the commercial stage, with the erection of a new plant having a capacity of 5,000 lb. a day.

Announced last fall was a new elastic synthetic yarn possessing many of the characteristics of rubber; this yarn has an elongation at break ranging from 150 to 400%, depending on the method of manufacture. Monofilament yarns derived from vinylidene chloride have begun to be employed in weaving fabrics for military, industrial, household, and other uses.

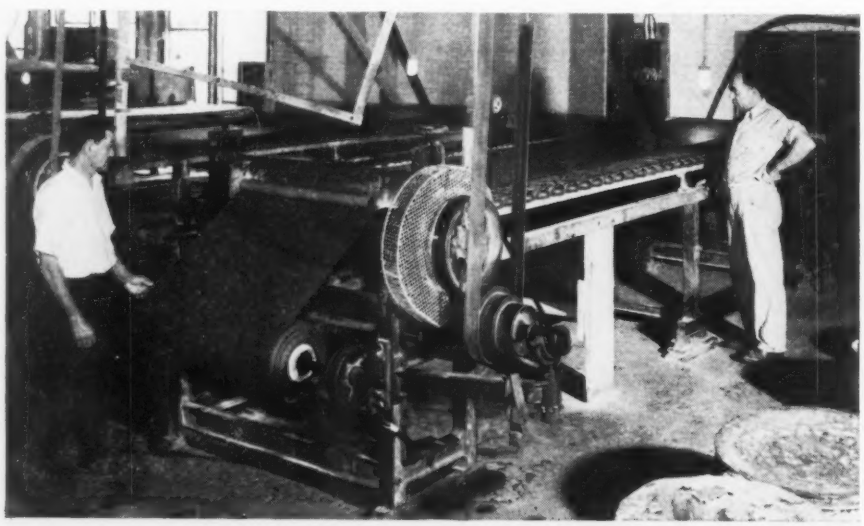
Redwood bark fiber, introduced a few months ago for blending with wool, is not a synthetic, but is noted here as an *ersatz* material of interest to textile manufacturers.

New Processes Speed Output of Military Fabrics

WARTIME REQUIREMENTS and restrictions have had a profound effect on the dyeing, printing, and finishing divisions. For dyeing military fabrics, three new processes of unusual timeliness and importance have been developed. The first is a continuous pigment dyeing method for producing fast-color shades on cottons, spun rayons, and mixtures. Accepted by the Quartermaster Corps for production of the standard olive drab shade on herringbone-twill, this process is proving valuable also for dyeing other fabrics. The process employs emulsions of the water-in-oil type made by dispersing pigments in a solution of synthetic resins into which water is emulsified.

The second process is a continuous method for dyeing indigo on Navy uniform fabrics. Developed in a New England woolen mill with the cooperation of one of the larger dye manufacturers, this process is carried out in a specially designed continuous machine which permits dyeing of approximately 5,000 lb. of wool in form of piece goods in 8 hr.

The third process is one for piece dyeing Navy fabrics, such as melton or kersey, with the leuco ester of indigo. In this process, the goods are scoured, (or preferably dry-cleaned by the continuous process announced a year or two ago) carbonized, acid fulled, dyed with the leuco ester, washed, developed with sodium nitrite, and then brought



Synthetic resins are being employed extensively for coating military fabrics. In the method of application illustrated, the plastic is mixed with solvents to form a "cement" which is applied to the fabric on a spreader; the solvents evaporate as the freshly coated fabric moves over a steam table.

to the desired shade by topping with chrome colors.

Production of special finishes on military fabrics has involved the adaptation of processes originally developed for use on civilian fabrics, together with the development of entirely new processes. Among the finishes which are particularly important are those for rendering textiles waterproof, water-repellent, mildewproof, and fire-resistant. In some instances, combination finishes combining resistance to two or more agencies are desired.

Water-repellent finishes include the well-known aluminum acetate-wax types and the more durable quarternary ammonium compounds. Waterproof finishes are obtained by treating the fabric with oils, waxes, asphalt, tar, resins, etc., and by coating; whereas formerly rubber was employed extensively for producing coated finishes, vinyl resins are now being used. Mildewproofing is usually carried out with a copper compound, such as copper naphthenate or copper oleate, or with chlor-phenols or other phenolic compounds; recently phenyl mercuric acetate has been suggested as a wildewproofing agent. For flameproofing textiles, a wide variety of inorganic and organic compounds have been experimented with.

To speed up drying, carbonizing, ageing, or curing operations, numerous textile plants have installed electric infra-red lamps or gas-fired infra-red units. Infra-red equipment to date has been employed chiefly in conjunction with dryers already installed to increase their capacity. Drying with infra-red is still in its infancy, and as yet its advantages and scope are not fully known. It appears to be particularly suitable in application of special finishes where high-temperature treatment for a short period of time is required.

Introduction to the textile industry of two types of electrolytic cells for producing sodium hypochlorite brought to the forefront questions as to the feasibility of bleacheries and finishing plants making bleaching solutions for their own use. Installations of these cells in textile mills are too recent to permit any predictions as to how widely they will be adopted.

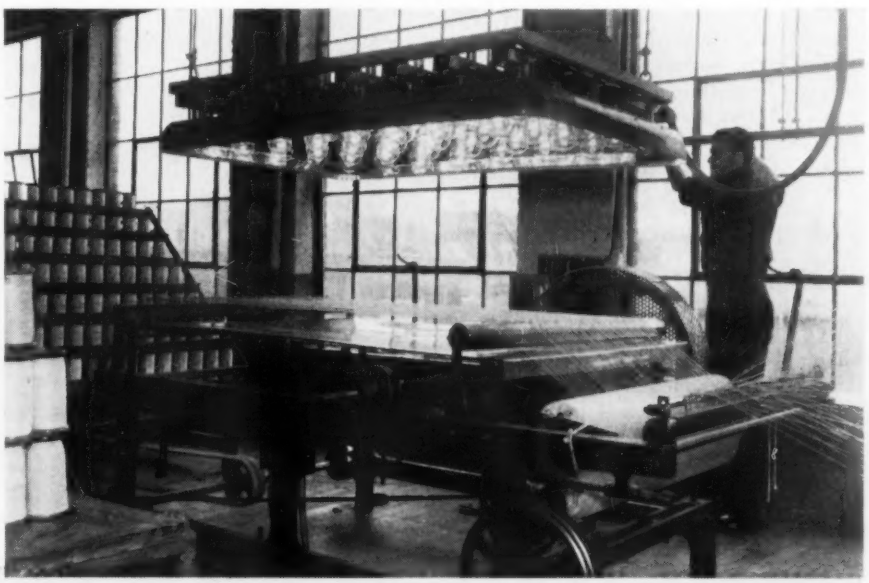
Of the several new or improved types of productive machinery announced since our 1942 review, more than half are designed for cloth room or finishing plant use. Among these are a fulling mill differing radically in construction from previous models; a high-speed tenter dryer for wool goods; and a range for detwisting, opening, slitting, extracting, and folding knitted fabrics in one operation. Others include a parachute-fabric inspection machine; a heavy-duty batcher designed particularly for duck, burlap, and similar fabrics desired in large rolls; a tacking and doubling machine securing stitches up to 1¼ in. on any type or weight of fabric; a measuring and examining machine with a speed range of 11 to 64 yd. per min.; a scutcher with extended folder, designed particularly for use with squeeze rolls; an automatic spreading machine for laying-up cloth in preparation for cutting: and an indicating and recording yardage meter for use on folding, rolling, or examining machines.

Dyes and Chemicals Help War Effort

MANY OF THE NEW CHEMICALS introduced during 1942 fall into one of the following groups: (1) compounds for use in treating military fabrics; and (2) substitutes for chemicals now difficult to obtain. Typical of compounds in the first group are mildewproofing agents for sandbag and camouflage fabrics; a water-repellent finish meeting Tentative Specification PQD115; proofing compounds used for treating canvas and other fabrics to meet Federal Specification CCC-D-746; products for coloring sandbag and camouflage cloth to meet Army Specifications T-1452, T-1212, and T-1213; and a permanent cellulose finish for treating mosquito netting.

Examples of substitute materials offered are hygroscopic agents to replace glycerine; linseed-base oils to replace castor oil; two substitutes for Japan wax; a synthetic pine oil; a rayon warp-sizing compound for replacing gelatin; new formulations of ethyl cellulose plastic to replace rubber in coated fabrics; and a finishing agent derived from petroleum to be employed in place of sulphonated tallow. For use in processing wool, the National Association of Wool Manufacturers has recommended a blend of refined mineral oil and lard (or grease) oil. At least six new products have been brought out for lubricating and sizing rayon hosiery yarns, as well as a special finish for cotton lace and mesh hosiery.

Among other new chemicals are a concentrated desizing agent; an all-purpose sulphonated oil having 22% combined SO_3; a transparent plastic characterized by its high resistance to abrasion when used to impregnate fabrics; a water-soluble synthetic resin for use in sizing and finishing yarns and fabrics; a synthetic resin for use in backfilling and weighting low-count cotton fabrics; another synthetic resin for finishing spun-rayon fabrics; a finishing material for controlling shrinkage of fabrics; a combined delustering



Many plants have speeded up drying, carbonizing, and ageing or curing operations by installation of electric infra-red lamps or gas-fired infra-red units.

and softening agent for rayon piece goods and hosiery; a germicidal agent for treating textiles; and two new moth-repelling compounds.

Research Quickens Tempo

TEXTILE RESEARCH has taken on a new impetus and is now closely geared to the war effort. Much of the current work of textile research groups is being carried out at the request of the Government and must remain confidential. Some of the activities of the Textile Research Institute and the Textile Foundation which can be mentioned are the development of an improved chemical process for modifying wool which makes it resistant to damage by moths, bacteria, alkalis, and acids; the formation of a Textile Research War Council; and the cooperation with Government agencies on development of improved aviation clothing, substitutes for manila and sisal, and accelerated ageing tests for military fabrics.

At the new Southern Regional Laboratory of the U. S. Department of Agriculture, work has been carried out on mildewproofing of military fabrics and other war projects. The American Association of Textile Chemists & Colorists has cooperated with the Quartermaster Corps on development ways and means for improving the fastness of uniform fabrics, and also has started an investigation of accelerated ageing tests for sulphur-dyed materials.

Mill research carried out by the Southern Textile Association and the Arkwrights under sponsorship of the Textile Foundation has shown that cotton card speeds can be increased from 165 to over 192 r.p.m. with no impairment of yarn strength or appearance.

New Equipment

MECHANICAL DEVELOPMENTS other than those mentioned above have consisted mostly of attachments for productive machines plus several new types of auxiliary equipment. Thus, for spinning rayon, Aralac, and natural fibers ranging from 2 to 8 in., a conversion system for cotton spinning equipment was announced early in 1942. Also of interest to spinning mills are French drawing aprons made of leather tanned in the United States; a new roller cover material for drawing rolls, and a large-package, ball-bearing spindle for woolen mules. Among other new machines and attachments are a spooler for carpet yarns; an attachment permitting No. 75 coners to wind pineapple cones; a Nylon sizing machine; a hydraulic lift warp-beam truck which facilitates handling of loom beams in limited spaces found between looms; sectional warp beams for tricot knitting; and a filling-mix attachment for automatic looms used first in woolen mills and now in an improved form for weaving worsted military fabrics.

Much of the auxiliary equipment brought out in 1942 was designed for protection of plants against fires and other damage due to air raids, sabotage and other enemy acts; to save manpower and prevent accidents; and to conserve metals, rubber, and other scarce materials. Many of these developments were described in our July, 1942, Plant Protection Issue.

The Job for 1943

DIFFICULT as have been the problems of the last twelve months, those ahead may be even more difficult. To supply an Army and Navy of the size contemplated by the end of 1943, the textile industry must continue its large-scale production of military fabrics. It must do this with its present equipment and despite a growing shortage of manpower. This means that greater emphasis than ever before must be put on maintenance of machinery, that more women must be employed, that employee training and upgrading programs must be accelerated.

Some steps have already been taken toward the simplification and standardization of civilian fabrics; but these are only the start. As yet nobody knows what form the simplification program will take, who will control it, or just how it will affect individual textile mills. A probability is that specifications for Victory fabrics will be set up similar to those for Utility fabrics adopted in England, and that mills will have to manufacture to those specifications. A possibility is that there will be concentration of production in a limited number of plants of textiles for civilians.

For certain special military purposes, better fabrics and better finishes are desired than those now available. Thus the Army wants cotton fabrics which have suffered less degradation than now occurs in bleaching, dyeing, and finishing; it wants light-weight, warmth-retaining fabrics for arctic use; the Air Corps wants a uniform fabric which is waterproof, flameproof, resistant to oil and gasoline, but not air-tight. Development of these and other special fabrics calls for accelerated research and experimental work.

Post-War Planning

FOR OVER A YEAR British textile manufacturers and finishers have been laying plans for the post-war period, and a number of articles have already appeared in English textile publications discussing possible post-war developments, both economic and technical. In this country comparatively few textile companies have made a start on post-war planning and an even smaller number have begun research and development on new products for the post-war period. But it is not too early for textile men generally to begin their thinking, planning, and research on post-war developments. Such planning should be based on the premise that after the war the textile industry will not be the same as it was before the war. Aside from the broad economic aspects which must be considered, there are numerous technical developments which require study.

Fortunately some facts already are evident which can serve as guides to this post-war planning by individual companies. Thus, it is certain that as soon as the war ends large quantities of high-strength rayon, Nylon, and other synthetics will be available for production of civilian fabrics. It is certain that many of the new fabrics and finishes developed for military purposes can be adapted to civilian use. It is certain that much of the present equipment will be worn out and will have to be replaced. It is certain that many new types of equipment will be introduced to the textile industry, some of them of revolutionary design. It is certain that the textile industry will meet increasing competition from the paper and other industries. It is certain that entirely new types of textiles and new uses for these textiles can be developed.

Setting up of a committee consisting of one of the top executives of the company, director of research, the plant engineer, chief chemist, plant manager or superintendent, and sales manager is the method usually followed in other industries for inaugurating a program of post-war planning. Adoption by textile mills of this idea, or a modification of it, is essential if they are to cope successfully with the new problems which will arise at the end of the war and if they are to take advantage of the new opportunities which will be offered with the coming of peace.

★ TEXTILE WAR MANUAL ★

MANUAL OF MILITARY FABRICS

Part I—Wind-Resistant Cotton Cloth

Manufacturing and processing details for Type II 5-oz. poplin covered by P.Q.D. 1A

With the start of the defense program, TEXTILE WORLD began publication in August, 1940, of a series of articles on Fabrics for Military Purposes. Essential information on gray constructions, yarn sizes, and processing of nearly 100 different types of woven fabrics and knit goods has been presented thus far in that series. In producing certain of the fabrics required in large quantities, some mills have been able to meet specifications with much less difficulty than have other mills. This is due largely to lack of uniformity in manufacturing methods throughout the industry. Contributing to this lack of uniformity is the fact that Government specifications for finished fabrics in most instances give no details on manufacturing and processing operations.

Recognizing that complete data on gray constructions, yarn organizations, weaving, and finishing, would be of great assistance to textile mills, the editors of TEXTILE WORLD, with the approval of officers of the Quartermaster Corps, have begun the preparation of a Manual of Military Fabrics. This manual will describe in detail the manufacture and processing of those types of fabrics which are most urgently needed in large quantities. Part I of the manual deals with 5-oz. Cotton Poplin Type II, covered by P.Q.D. No. 1A. The mill organizations and other manufacturing and processing data were furnished through the cooperation of textile mills which are producing this fabric under government contract. It is recognized that other plants having different types of equipment will have to make some modifications in the organizations, formulas, and procedures presented. Accordingly, these data should be regarded not as "standards" which must be followed to the letter, but as guides to the more efficient production of this fabric. In presenting Part I of the Manual of Military Fabrics, TEXTILE WORLD takes another progressive step in providing the industry with vital but hard-to-get information which never before has been available.

TWO COMBED-YARN FABRICS needed in large quantities by the Army are covered in Quartermaster Corps Tentative Specification P.Q.D. No. 1A. Type I, a 5-oz. water-repellent cotton twill, commonly known as "Byrd Cloth," is generally regarded as the ideal cloth for garments for arctic wear; unfortunately comparatively few mills are manufacturing this fabric, due to the fact that it is difficult to produce. Type II, a 5-oz. water-repellent cotton poplin, is also employed in garments for arctic wear and is used extensively in making field jackets; it can be produced with less difficulty than can Type I. Below is given a brief abstract of that part of Specification P.Q.D. 1A referring to Type II 5-oz. poplin, followed by detailed information—not given in the specification—on the manufacture and processing of this fabric.

Garments made from wind-resistant, water-repellent 5-oz. poplin provide protection to soldiers against arctic weather.

Abstract of Specification

Yarns: Cotton used in the manufacture of yarn shall be thoroughly cleaned, well carded, combed, evenly spun; warp shall be 2-ply; filling yarn may be single.

Color: Unless otherwise specified in invitation for bids color shall be an approved shade of olive drab. Cloth shall be evenly dyed with vat colors and shall show a good fastness to the following tests: *Fastness to Weather*—Samples to be exposed for 30 days. *Fastness to Laundering*—Test to be conducted by washing procedure as outlined in paragraphs 1 and 2 of Section XIV, Federal Specification CCC-T-191. *Fastness to Bleaching*—Test to be conducted as outlined in Specification P.Q.D. 1A. *Physical Requirements:* Width 36 in. minimum; weight (minimum per sq. yd.) 5.0 oz.; ends and picks (minimum) 106 x 52; breaking strength minimum, by 1x1x3 grab method, shall be 115 lb. warp, 60 lb. filling. Weave shall be plain. The cloth shall be closely singed, full mercerized, and be practically free of sizing. Finishing or loading materials to increase weight or strength is prohibited. Fabric shall be closely singed, fully mercerized, direction of the warp or the filling when subjected to tests for shrinkage in laundering outlined in Section XIV, Federal Specification CCC-T-191a. Fabric shall be given a durable water-repellent treatment to meet the following requirement:

	Spray Rating	Hydrostatic Pressure —CM
Initially	90	30
After 3 Launderings	70	20
After 3 Dry Cleanings	70	30

Air Permeability—Permeability to air

★ DIGEST OF MILITARY FABRIC SPECIFICATIONS *begins on page 86* ★

as determined by a "Gurley Densometer" using a ¼-in. orifice and a 5-oz. weight shall not be less than 40 seconds for the passage of 300 c.c. of air.

Tests

The methods of testing described in Federal Specification CCC-T-191a, wherever applicable, shall be followed. Tests for hydrostatic resistance, spray resistance, laundering, dry-cleaning, and bleaching are outlined in Specification P.Q.D. No. 1A.

Manufacturing Details

Yarn manufacture—Yarns are made on standard combed yarn equipment without special adjustments in feeds and speeds of the pickers through to the finished yarn. Clean stock is necessary.

Opening, blending, picking, carding, combing, and drawing organizations given below (designated No. 1 in every case) can be the same for warp and filling. Roving organization No. 1 for 5.16 hr. and spinning organization No. 1 for 40s yarn are employed for making the warp yarn. Roving organization No. 2 for 4.00 hr. and spinning organization No. 2 for 19s yarn are employed for making the filling yarn.

Opening and Blending Organization No. 1

Grade—Middling leaf, strict middling color
Staple—1 1/16 in.
Mix—Load from 20 bales
Processes—Blending feeder, lattice opener, trunkline

Picking Organization No. 1
13-oz. lap

One Process
Type beaters:
3-blade back
2-blade center
Kirchner front
Beater speeds:
1007 r.p.m. back
873 r.p.m. center
1005 r.p.m. front

Carding Organization No. 1
44-gr. sliver

455 r.p.m. lickerin
183 r.p.m. cylinder
6.86 r.p.m. doffer
4.3 in. min. flats
50 in. dia. cylinder
27 in. dia. doffer
100 cylinder wire
110 doffer wire
110 flat wire
119 draft, waste deducted
6.6 lb. per hr. production
8% waste
Main settings:
0.012 in. feedplate to lickerin
0.007 in. lickerin to cyl.
0.007 in. doffer to cyl.
0.009 in. flat to cyl. Points—1-2-3 (front)
0.011 in. flat to cyl. Points—4-5 (back)
0.034 in. front plate
0.017 in. back plate (top)
0.034 in. back plate (bottom)

Combing Organization No. 1
54-gr. sliver

Sliver Lapper
20 ends up
535 gr. lap
1.65 draft
Ribbon Lapper
6 doublings
725 gr. lap
4.43 draft
Comber
93 nips per min.
13 % waste
54 gr. sliver
70 draft, waste deducted
13 lb. per hr. production

Drawing Organization No. 1
56-gr. sliver

220 r.p.m. F. R.
1 3/8 in. dia. F. R.
5.80 draft
Type Rolls:
Top: leather
Bottom: steel fluted

Roving Organization No. 1
5.16 h.r.

Slubbers
3.9 draft
191 F. R. speed
1¼ in. dia. F. R.
0.58 hank roving
0.685 twist
Intermediates
4.90 draft
159 F. R. speed
1½ in. dia. F. R.
1.42 hank roving
1.17 twist
Speeders
7.27 draft
130 F. R. speed
1⅛ in. dia. F. R.
5.16 h. r.
2.5 twist

Spinning Organization No. 1
40s yarn

5.16 roving-double
15½ draft
148 F. R. speed
1 in. dia. F. R.
3.48 twist multiple
Z direction of twist
7 gr. travelers (weight of 10)
1⅞ in. ring size

Drawing and Roving Organization No. 2
(Roving organization same as No. 1 up to speeders.)

Speeders
5.63 draft
160 F. R. speed
1⅛ in. dia. F. R.
4.00 hank roving
2.2 twist

Spinning Organization No. 2
19s yarn

4.00 roving-double
9½ draft
190 F. R. speed
1 in. dia. F. R.
3.22 twist multiple
Z direction of twist
18 gr. travelers (weight of 10)
1⅝ in. ring size
7¾ in. package-quill
1.17 oz. per quill
10–15 yd. bunch
1¾ in. taper

Winding and Twisting Organization No. 1
40/2 yarn
Spool type pkg.
1¾ lb. pkg.
Twisting
40 yarn No.
2 ply
S direction of twist
16 twist per in.
3½ in. ring (vertical)
No. 19 traveler-bronze
3.57 twist multiple
80 F. R. speed
1½ dia. F. R.
Winding
Spool type pkg.
1¼ lb. pkg.

Warping Organization No. 1

14,000 yd. length set
8 beams to set
490 ends per beam
V-type creel, 670 ends capacity

Slashing Organization No. 1

30 yd. min. slasher
¾ to 1¼% size added
Starch, potato, 25 lb. to 100 gal.

Drawing-In and Weaving Organization No. 1

5.80-oz. poplin 36-in. finished width

Drawing-in
No. harnesses 4
980 ends per harness
Duplex type of harness
10 in. length heddle
Flat steel type heddle
Mechanical type 0.012 in. thick drop-wire
Weaving
Gray: Oz. lin. yd. 6.72; yd. lb. 2.38; width 38½ in.
Basis 6.3 oz., 36 in.
Wp. ends in. 102; picks in. 58
Warp yarn 40/2; fill. Yarn 19/1
Percent warp 66.13; Percent filling 33.87
Selv. threads 40/2
Ends selv. 24; Selv. draw 3 dents—2 ends double
Reed D/in. 25; Ends/dent 4
Reed spread 39.2 in. No. harnesses 4
Ends per eye 1; Weave plain
Pattern or straight draw skip—1-3-2-4
Take-up warp 16%; take-up fill. 1.8%

Fabric Manufacture—Keep a loose top shed on warp to get a good face on poplin. Time loom to close shed early, 1½ to 2 in. before reed strikes the fell of the cloth. Tension warp just enough to take picks well. Three creeper picks should show between reed and fell of cloth.

Looms suitable for weaving this fabric include Draper K Model equipped with Roper let-off, Midget feeler, and Stafford thread cutter and run at approximately 170 p.p.m. Draper Models E, X, X-2, XK, and XD; attachments recommended are: Nutting bar take-up; Stafford thread cutter; and Midget feeler; loom speeds require adjustment to the fabric—especially if high-production fabric was formerly run on them; Crompton & Knowles Models C-3, C-4, C-5, and C-6; no changes are recommended in the equipment of these looms; loom speeds can be adjusted to secure maximum production of first quality cloth.

Cloth Room Organization No. 1

No. Inspections—One
Type Inspections—Fold and inspect
No. Sides Burled—Both sides
No. Bushings—None
No. Shearings—None
No. Runs Napper—None
Type Grading—Flat fold
Folding—Ship in fold
Length Folds—1 yd.
Bales or Rolls—Bales
Fin. Yd. per cut—Not less than 50
Total Yd. per pkg.—1,200

Finishing Details

Scouring and Mercerizing

1. Inspect cloth in the gray.
2. Sew pieces end to end, using flat butted seams.
3. Singe on both sides.
4. Desize in quench box at end of singer. Let stand in pit 3 to 4 hr.
5. Wash through tight string washer.
6. Open and dry on cans and wind for the boil-out machine.
7. Boil out on continuous open-width machine. A typical boil-out or scouring formula is 10° Tw. caustic soda and 0.2% fatty alcohol sulphate and 0.1% sodium hexametaphosphate on the weight of the liquor.
8. Mercerize wet; wash and dry.
9. Wind on rolls for dyeing.

(Desizing and scouring can be carried on jigs, but procedure recommended above is speedier.)

Dyeing

Dye to approved olive drab shade, sample of which can be obtained from Philadelphia Quartermaster Depot, with vat colors by pigment-pad method.

Following is approximate formula for producing the required shade:

Vat Dyeing Formula No. 1
Olive Drab—Pigment Pad Method

Dye	*Oz. per Gal.*
Vat Khaki 2 G (pr. 122)	4.75
Vat Olive R (C.I. 1150)	3.60
Vat Brown G (C.I. 1152)	1.52

A second formula which is particularly suitable when the Zelan water-repellent finish is to be applied is as follows:

Vat Dyeing Formula No. 2
Olive Drab—Pigment Pad Method

Dye	*Oz. per Gal.*
Vat Brown G, Paste Single	6.655
Vat Olive Green B, Paste Double	0.862
Vat Gold. Orange 3G, Paste Single	0.072

1. Pad cloth at constant cloth speed of 120 to 150 yd. per min. and temperature of 140°F., winding on 850-yd. rolls.
2. Reduce on jig 4 to 6 ends, at 140°F. in 6 lb. sodium hydrosulphite and 6 lb. of caustic soda to 100 gal. (Added in equal parts at beginning of first two ends.)
3. Rinse 2 ends in cold water.
4. Raise temperature to 140°F.; add 4 lb. sodium bichromate and 1½ gal acetic acid (56%) and give 2 to 4 ends.
5. Rinse 4 ends with water at 160°F.
6. Dry on cans.

Finishing.

Apply durable water-repellent finish which will meet requirements given above in abstract of specification. Following is a suitable procedure using Zelan as the water repellent and employing continuous machine, such as is illustrated in Fig. 1.

Water-Repellent Procedure No. 1

1. Treat fabric in impregnating machine *A* (Fig. 1) with a solution containing 70 to 90 lb. Zelan, depending on the pad pressure, to 100 gal. water maintained at a temperature of 90 to 110°F.
2. Air dry at a maximum wet-bulb temperature of 100°F. in drying machine *B* (tenter).
3. Cure in reaction chamber *C* at a temperature ranging from 300°F. for 2 min. to 400°F. for 40 to 45 seconds.
4. Scour in first box of machine *D* in a solution of soda ash and fatty alcohol sulphate detergent at a temperature of 140°F. Keep on alkaline side and use enough detergent to wet cloth.
5. Rinse in second box of machine *D* with water at 140°F. Dry on inclosed tenter frame *E* at a temperature of 275°F. Cloth speed in tenter 75 yd. per min.

Preshrink on Sanforizing machine or other preshrinking equipment to give residual finish of not more than 2% in either warp or filling, when finished to give a minimum width of 36 in.

Inspecting and Folding

1. Inspect.
2. Fold in continuous pieces of not less than 50 yd. using 1-yd. folds.
3. Ticket, pack, and mark according to instructions in Specification P.Q.D. No. 1A.

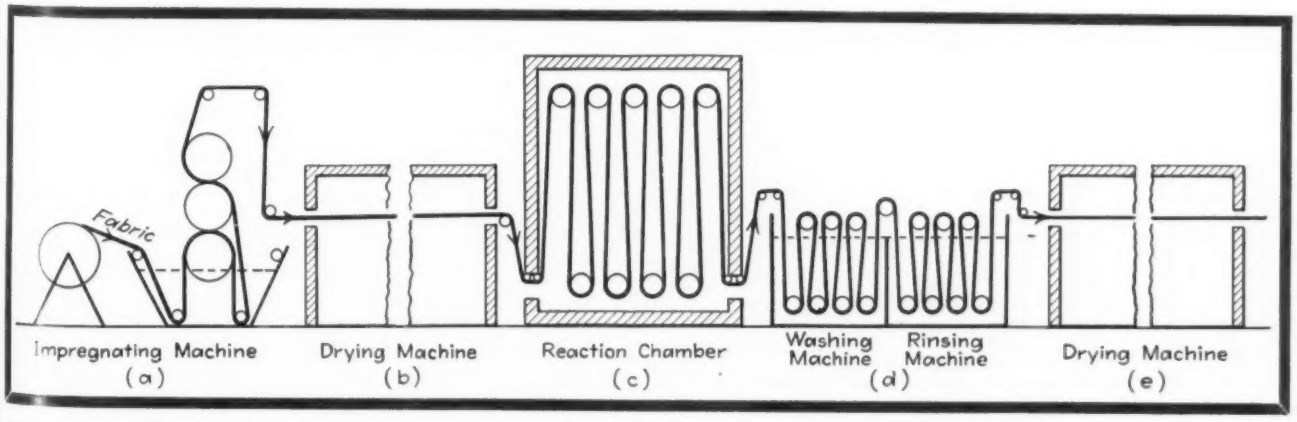


Fig. 1. Diagram of equipment employed for applying Zelan water-repellent finish.

WHAT THE GOVERNMENT BUYS

Digest of Textile Specifications

THIS SECTION of the Textile War Manual comprises a new and enlarged digest of Government specifications, containing 263 items, as compared with 165 listed in our February, 1942, issue. Hundreds of requests for reprints of the original tables demonstrated their value to textile mills which have or desire Government contracts. Brought completely up-to-date by inclusion of the specifications issued during the last twelve months by the Army, Navy, and other Government departments, the new tables provide a quick and convenient means for ascertaining what types of textiles are purchased by the Government. With this information, one can determine what particular products his plant is best fitted to produce.

Major types of textiles purchased by the Government are classified and indexed below. Data given include type of textile, construction, and specification number. In the tables below the following abbreviations are used:

AN	Army-Navy Aeronautical Specification	blchd	bleached
		cmb	combed
		crd	carded
f	filling	shrd	sheared
ht rayon	high tenacity rayon	w	warp
		W.A.	War Aid
L.L.	Lease-Lend	w. repel	water repellent
merc	mercerized		
s	single yarn	wln	woolen
sgd	singed	wstd	worsted
shr	shrunk		

The character of each specification is indicated by the capital letters in parentheses preceding the specification number:

F	Federal Specification
A	U. S. Army Specification
AC	Army Air Corps Specification
AO	Army Ordnance Specification
M	Marine Corps Specification
N	Navy Specification

Purchasing agencies are indicated as follows:

PQ	Philadelphia (Pa.) QM Depot
JQ	Jeffersonville (Ind.) QM Depot
WF	Army Air Corps, Materiel Div., Wright Field, Dayton, Ohio
Med	Army Medical Department, Washington, D. C.
Eng	Army Corps of Engineers, Washington, D. C.
Chem	Army Chemical Warfare Service, Edgewood, Md.
MQ	Marine Quartermaster, Philadelphia
A	Navy Bureau of Aeronautics, Washington, D. C.
AO	Army Ordnance Department, Washington, D. C.
C	Navy Bureau of Construction and Repair, Washington, D. C.
M	Navy Bureau of Medicine and Surgery, Washington, D. C.
N	Navy Bureau of Navigation, Washington, D. C.
O	Navy Bureau of Ordnance, Washington, D. C.
S	Navy Bureau of Supplies and Accounts, Washington, D. C.
Y	Navy Bureau of Yards and Docks, Washington, D. C.

Prospective bidders can obtain complete copies of specifications for particular types of textile from the purchasing agencies which contract for those types. Copies of U. S. Army specifications and Federal specifications may be obtained from Supt. of Documents, Washington, D. C. Certain of the textiles listed have been described in greater detail in previous issues of TEXTILE WORLD. Date of issue in which descriptions appeared is given in the last column of each table under T. W.

A. COTTON FABRICS, WOVEN

TEXTILE	CONSTRUCTION AND CHARACTERISTICS	YARNS	BOUGHT BY	SPEC. NO.	T.W.
Airplane cloth	36–90 in., 80x80, 4.0 oz., chem. neut. 1½″ cotton	2-ply cmb. merc	WF, AOS	AN-CCC-C-399	5/41
Balloon cloth	5 types, 80x80–120x120, 40½–54½, 1.40–5.60 oz.	s & ply cmb	WF	(A) 6-39-G	....
Balloon cloth	4 types, 42&53 in., 80x80–120x120, 2.05–5.60 oz.	s, 2-ply	AOS	(N)27C13(INT)a	....
Balloon cloth	34–42 in., 124x118, 3.7 oz., OD vat, w-repel	s cmb	PQ	PQD 135	5/42
Balloon cloth	Type III, 42½ in., 120x120, 2.05 oz., desized, coated white vinyl resin, other side printed OD	s cmb	PQ	PQD 257	12/42
Broadcloth	130x64, 3.2 oz., merc, fully blchd, no size	s or 2-ply cmb	PQ	(A)6-188B	....
Bunting	18&36 in., 32x31&31x30, 3.2 & 4.5 oz., sgd, merc.	s crd	PQ, CS	(F)CCC-B-791a	....
Canvas, 6-oz.	24 in., 42x25, black	s crd	S	(N)27C26	....
Canvas, padding	Types I&II, 38-52x38-45, 6.0&6.5 oz.	s or 2-ply, crd	PQ	(A)14-6A	8/42
Chambray	36 in., 68x48-58, 4.1&5 oz./sq. yd., colored warp	s crd	S	(F)CCC-C-231	....
Cloth, cotton	Types I&II, 36-40 in., 64-102x54-100, 3.15-6.30 yd.	s or ply, crd	PQ	(A)6-109B	....
Cloth, imperm.	36-54 in., 65x65, 5 oz. gray, color OD in coating	crd s or 2-ply	Chem, PQ	(A)6-269A	....
Cloth, 6¾ oz.	36 in., 112x52 w. repel., OD vat	s or ply, crd	PQ	PQD 127	6/42
Cloth, padding	44x38, 5.3-5.8, oz., dyed 1. brown	s crd	MQ	(M)6/27/40	....
Corduroy	36 in., 48x118, 7½ oz., 8 wales/in., dye wine	s crd	PQ	PQD 217	11/42
Cloth, 16-oz.	36 in., 54x42, fast gray color, waterproofed	.....	A	(N)M-2816	....
Cloth, jungle	2 types, 36 in., 50x310&56x312, 8&13 oz.	s cmb	AS	(N)27C22c	....
Dmask, table	Types A-F, 58-72 in., 56x50-78x78, 4.4-5.5 oz.	s crd	PQ, S	(F)CCC-D-71	....
Denim, unshrunk	28 in., 60-70x36-40, 1.78-2.4 yd., blue, indigo	s crd	PQ	(F)CCC-D-156a	3/41
Drill, 6½-oz.	35 in., 74x58, blchd, shr.	s crd	PQ	Neg. 314	8/42
Drill, unbleached	Types A-D, 30 in., 66-72x40-60, 2.5-3.25 yd.	s crd	PQ, S	(F)CCC-D-651	12/41
Drill, 7½-oz.	Type I&II, 74x60, 74x48, unbl., fully shr.	s crd	PQ	(A)6-247A	12/42
Drill, 7.7-oz.	28½,36,40 in.; 112x54, 3/1 tw., sgd, blchd, merc	s cmb	MQ	(M)11/22/37	7/42
Drill, 8½-oz.	Amend. I, 28 in., 72x60, 2.50 yd., 2/1 tw., unbl., shr.	s crd	PQ	(A)6-247	6/42
Duck	6-15 oz., 72x25-86x30, ply-fill&flat, 30¼-31¼ in.	s&2-ply	JQ	(F)CCC-D-761	....
Duck	7.9-15.5 oz., 28½-33 in., 42-62x31-54, w-repel.	2&3-ply w&f	JQ,CAOSY	(F)CCC-D-771a	2/42
Duck	Types I,II,III,IV, 60-120 in., numbered, Army, dyed	plied, crd	MQ	(M)10/10/42	....

Textile	Construction and Characteristics	Yarns	Bought By	Spec. No.	T.W.
Duck, 48-oz.	24-42 in., 21x12	10 & 13-ply w&f	PQ	PQD 136	8/42
Duck	Types I-IV, numbered&Army, 7.9-31.9 oz./sq. yd.	crd, plied	JQ	JQD 208A	....
Fabric, chute pack	36 in., 54x42, 16-oz., gray color, waterproof	.....	A	(N)M-281b	....
Gauze, plain	7 types, 36-38½ in., 20x12-44x40, 9.7-26.4 yd.	s crd	Med, MS	(F)CCC-G-101a	....
Italian, 4.8-oz.	32&36 in., 78x126, 1/4 tw., sgd, merc	s cmb	MQ	(M)1/26/38	....
Jean, 4.8-oz.	36 in., 98x60, 2/1 tw., fully blchd	s crd	PQ	(F)CCC-J-191	....
Leno, 1.5 oz.	28-30 ends/in., 42-45 picks, 35-48 in., 3-pick	s crd	PQ	PQD No. 17A	5/41
Lining, 4.5-oz.	32 in., 50x44 (40-in., 48x48 sheeting)	s crd	PQ	(A)6-291	....
Lining, 5-oz.	36 in., 78x126, 1/4 tw., sgd, merc, shr, dye black	s cmb	S	(N)27L6	7/42
Lining, Albert tw.	32-42 in., 78x126, 1/4 tw., sgd, merc, shr, OD vat	s cmb	PQ	(A)6-100B	7/42
Muslin	Types I&II, 36 in., 85x72x64x56, 3.1&2.4 oz., blch	s crd	PQ, Med	(F)CCC-M-911	....
Muslin	28-54 in., 3.1 oz., white	s crd	PQ	PQD 46	....
Nainsook	35½ in., 90x84, 3.3 oz.	s crd	S	(N)55N1b	....
Nets, camouflage	60x18, mesh 2½-in. on bar, No. 18 cotton seine twine	8/3 ply&10/2 ply	Eng	(A)T-1534	....
Nets, shrimp	Types I,II,III,IV, 8¼ oz., 900-1764 meshes/sq. ft., flame resist.	.....	Eng	(A)T-1669	....
Netting, lace	Types I&II, 38-48 in., 420-500 mesh, 1.8 oz., OD	cmb	PQ	PDQ 280	....
Netting, marquisette	38 in., 50x50, 1.8 oz., mesh 625-676, sgd, merc, per. finish, OD without sulphur	s cmb	PQ	PQD 260	11/42
Osnaburg	Classes A-E, 29½-71 in., 32-40x28-32, 6.1-8 oz.	s crd	AO, Eng	(A)6-280A	....
Osnaburg	30–40 in., 40x28, 7 oz., unblchd	s crd	MQ	(M)7/8/40	....
Percale	36 in., 85x75, 3.1 oz., fully shr	s crd	PQ, CS	(F)CCC-P-191	8/41
Pillow tubing	42 in., 74x66, 4.6 oz., 36&38½ in. lengths	s crd	PQ,MQ,CS	(F)DDD-P-351	....
Poncho	Types I&II, 96x94, 1.80 oz., w-repel, coated	cmb	MQ	(M)12/24/42	....
Poplin, 4-oz.	34–40 in., 100x44, blchd, merc, shr	s crd	PQ	Invitation	....
Poplin, 5-oz.	Type II, 36 in., 106x52, OD vat, sgd, w-repel	cmb s&2-ply	PQ	PQD No. 1A	8/41
Print Cloth	38½ in., 64x60, 5.35 yd., sulphur OD, w-repel	s crd	PQ	PQD No. 7	....
Print Cloth	39 in., 80x80, 4 yd., sulphur OD, w-repel	s crd	PQ	PQD No. 7	....
Raincoat fabric	4.6-oz., sulphur OD, w-repel	singles	PQ	PQD 71D	....
Sateen, 9-oz.	36 in , 112x68, shr., w-repel, wind-resistant	2-ply cmb	PQ	PQD 245B	....
Seersucker, 4-oz.	34-in., 112x80, sgd., merc., shr., br. and wh. stripes	single	PQ	PQD 306	....
Seersucker, 4.2-oz	115x82, shr., vat-dyed	s crd	PQ	PQD 210	11/42
Sheeting, 4-oz.	60x56, sulphur OD	s crd	PQ	PQD 710	....
Sheeting, narrow	31-40 in., 44x40 to 56x60, 3.4 to 5.3 oz., unblchd	s crd	PQ, CS	(F)CCC-S-281	....
Sheeting, wide	42-90 in., 74x66, 4.6 oz., blchd	s crd	PQ,MQ,CS	(F)CCC-S-271	....
Sheeting, wide	48-90 in., 68x72, 4.7 oz., unblchd	s crd	PQ,MQ,CS	(F)CCC-S-291	....
Sheeting	36-54 in., 68x72, 4-5 oz.	s crd	Chem	Invitation	....
Sheeting	54-in., 72x72, 4-5 oz.	2-ply cmb	Chem	Invitation	....
Sheeting, OD	35 in., 48x48, 5 oz.	s crd	PQ	Neg. 272	8/42
Shirting	35½ in., 104x42, 3¾ oz., Oxford weave, merc, OD	s cmb	MQ	(M)4/18/34	....
Silesia, 4.4-oz.	36 in., 84x84, 2/1 tw., fast colors as spec.	s crd	MQ	(M)1/29/34	7/42
Silesia, 4.75-oz.	35½ in., 72x72, fast black	s crd	S	(N)55S7a	7/42
Silesia, 5-oz.	36 in., 72x74, 1/2 tw., OD or tan, sgd, merc.	s or 2-ply	PQ	(A)6-18C	7/42
Silesia, 5-oz.	36 in., 72x74, 1/2 tw., sgd, merc, dye in spec.	s or 2-ply crd	QM	(M)5/26/42	....
Suiting, 7.7-oz.	28½, 30, 40 in.; 112x54, 3/1 tw., OD vat	s cmb	MQ	(M)11/22/37	....
Towels, bath	Types I&II, 66-84x32-42, 17x29 in., 22x44 in., OD	s or ply, crd	PQ	PQD 329	....
Towels, bath	22x44 in., 96x48, 8.63 lb./doz., woven-in-name	s&2-ply	Med	(A)6-152A	....
Towels, huck	18x36 in., 71x60, 2.83 lb./doz., woven-in-name	s & 2-ply	Med	(A)6-153A	....
Towels, huck	17x36 in., 52x26, 2.55 lb./doz., woven-in-name	s or 2-ply	PQ, Med,S	(F)DDD-T-531	....
Towels, turkish	17x22 in., 68x32&84x42, woven-in-name	s&2-ply crd	PQ,MQ,MS	(F)DDD-T-551	....
Twill, h'bone	36-42 in., 72x46, 8.5 oz., 3-har., vat-dyed	s crd	PQ	(A)6-261	9/40
Twill, h'bone	36&40 in., 100x52, 9 oz., 1/3 tw., fully shr., OD	s crd	MQ	(M)2/1/40	....
Twill, 4.4-oz.	32 in., 78x126, 1/4 tw., OD vat, sgd, merc, shrein	cmb s or 2-ply	PQ	(A)6-100B	....
Twill, lining	36 in., 78x126, 5 oz., 1/3 tw., black, sgd, merc	s crd	S	(N)27L6	....
Twill, 6-oz.	35½ in., 114x54, 3/1 tw., clear tw. line, vat-dyed	cmb s or 2-ply	PQ	(A)6-311	1/42
Twill, 8.2-oz.	Type I, 28-57 in., 116x56, sgd, merc, shr, OD vat	cmb 2-ply	PQ	(A)6-201B	1/42
Twill, uniform	Type II, 28-57 in., 116x56, sgd, merc, shr, OD vat	cmb s&2-ply	PQ	(A)6-201B	1/42
Twill, uniform	Type III, 28-57 in., 90x54, sgd, merc, shr, OD vat	cmb s&2-ply	PQ	(A)6-201B	1/42
Twill, uniform	Type IV, 28-57 in., 116x56, sgd, merc, shr, OD vat	crd s or 2-ply	PQ	(A)6-201B	1/42
Twill, uniform	Type V, 28-57 in., 116x56, sgd, merc, shr, OD vat	cmb 2-ply	PQ	(A)6-201B	1/42
Twill, 5-oz.	Type I, 36 in., 185x92, 2/2 tw., OD vat, sgd, w-repel	cmb s&2-ply	PQ	PQD No. 1A	8/41
Twill	Types A&B, 29&32 in., 100x50, 3/1 tw., sgd, blchd	cmb w, crd f	S	(N)27T25a	3/41
Twill	Types C&D, 29&32 in., 100x54, 3/1 tw., sgd, blchd	cmb w&f	S	(N)27T25a	3/41
Twill	Type E, 35 in., 100x60, 2/1 tw. sgd, blchd	cmb w&f	S	(N)27T25a	3/41
Twill	Type F, 29-30 in., 100x50, 3/1 tw., sgd, blchd	crd w&f	S	(N)27T25a	....
Twill, black	26 in., 72x74, 5.5-6 oz., 2/1 tw., black, sgd, schreinered	.....	S	(N)27T12c	....

Among other cotton fabrics purchased are: camouflage netting, (A)6-70 B, by Eng; canton flannel, (F)CCC-F-451, by Med, S; cheesecloth, (F)CCC-C-271, by Eng, S; corduroy, by S, Emergency Relief Administration; gingham, (F)CCC-G-391; outing flannel, (F)CCC-F-466; seersucker PQD No. 8; whipcord, 16-oz., (A)8-55A, by Emergency Relief Administration; ticking, (F)FF-T-311, by S; and wiping cloths, (F)DDD-C-491 by Chem, S.

Continued on next page

B. WOOLEN AND WORSTED FABRICS, WOVEN

Textile	Construction and Characteristics	Yarns	Bought By	Spec. No.	T.W.
Alpaca pile	Types I&II, 5/8 in.&7/16 in. pile, 54x46, 18&21.5 oz., mothproof, w-repel	s & 2-ply	PQ	PQD 310	....
Alpaca pile, 14½-oz.	54 in., 54x39, cotton back, 3/8 in. pile	cotton crd, wstd	MQ	(M)12/18/42	....
Barathea, 14-oz.	56 in., 80x84, 64's wool, 8-harness	2-ply wstd	PQ	PQD 121A	....
Barathea, 18-oz.	56 in., 72x80, dark OD or drab, 62's wool	2-ply wstd	PQ	PQD 148	....
Blanket, 3¾ lb.	90x66 in., 36x 50, oxford,40's wool, 25% wool	s or 2-ply cot, s core	PQ	PQD 183A	....
Blanket, 3¾ lb.	Types I&II, 66 in., 28x30, 2/2 br. tw. 56's wool	s wln	PQ	(A)-8111A	....
Blanket, 4-lb.	4 types, 60–72 in., 34x34-40x44, 2/2 tw., 56's wool	s&2-ply	CMS	(N)27B7c	....
Bunting	19-36 in., 32x32, 4 oz., fast colors	2-ply wstd	PQ,CS	(F)CCC-B-801	....
Cloth, 17-oz.	56 in., 30x24, 1/3 tw., 55% 56's 45% noils, piece dye powder blue	s wln	PQ	PQD 169	....
Cloth, 20-oz.	54 in., 16x14, napped on back, OD	s wln	PQ	PQD 281	....
Cloth, 36-oz.,W.A.	56 in., 32x30, woven or knitted, oxford blend, 44's	s wln	PQ	PQD 225A	....
Cloth, beaver, 30-oz.	58 in., 84x84, d. green, 64-70's wool	s wln	MQ	(M)9/2/42	....
Cloth, uniform	Type I&II, 39 in., 40-50x40-46, 9.0-10.0 oz.	s&2-ply	PQ	PQD 172	....
Cloth, uniform	3 types; 16-22-28-oz.; 60x58-90x70; st-dye 70's	single	S	(N)27C19a	....
Covert, 12½-oz.	56 in., 70x56, 3/2 steep tw., fast blue, 64's wool	s wln	PQ	(A)8-122A	....
Covert, 14-oz.	56 in., 70x54, 3/2 tw., color in spec., 64's wool	2-ply w., single f.	PQ	PQD 305	....
Covert, 16-oz.	56 in., 60x52, 3/2 tw., w-repel, color in spec.	s wln	PQ	PQD 195	....
Doeskin, 26-oz.	56 in., 74x46, OD, 64's wool	wln	PQ	(A)8-129	....
Elastique, 16-oz.	54 in., 140x96, green, 64's wool	2-ply wstd	MQ	(M)11/5/42	....
Elastique, 18-oz.	56 in., 116x76, steep tw. (dobby), OD, 64's wool	s&2-ply	PQ	(A)8-109	11/41
Elastique, 18-oz.	56 in., 124x80, steep tw. (dobby), OD, 64's wool	2-ply wstd	PQ	PQD 32	11/41
Elastique, 19-oz.	54 in., 128x98, green, 64's wool	2-ply wstd	MQ	(M)12/15/42	....
Elastique, 24-oz.	56 in., 96x88, steep tw., OD, 64's wool	s&2-ply wstd	PQ	(A)8-95A	....
Facing, 16-oz	56 in., 62x60, sheared, pressed, 64's wool	2 wln	PQ	(A)8-43B	1/42
Flannel	Types I&II, 38-46x32-44, 12&20 oz., OD	wln	PQ	(A)8-133	....
Flannel, 8½-oz.	54 in., 72x66, 2/2 tw., st-dye khaki, 58's wool	s wstd	MQ	(M)10/12/26	....
Flannel, 10½-oz.	56-58 in., 68x68, 2/2 tw., OD, 60's wool	French wstd	PQ	(A)8-54B	10/41
Flannel, 11-oz.	56 in., 56x48, 2/2 tw., stock or piece dye dk. blue, 60's wool	s wln	S	(N)27F8b	3/42
Flannel, 13-oz.	54 in., 50x50, 2/2 tw., st-dye green, 60's wool	s wln	MQ	(M)5/10/38	....
Gabardine, 11½-oz.	56 in., 86x56, full lightly, warp 64's wool, filling 58's wool, powder blue	2-ply&single	PQ	PQD 150	....
Kersey, 16-oz.	54 in., 60x58, 2/2 br. tw., st-dye, 60's wool	s wln	MQ	(M)2/14/35	....
Kersey, 22-oz.	54 in., 50x55, 2/2 tw., st-dye green, 60's wool	s wln	MQ	(M)1/29/31	....
Kersey, 30 oz.	55 in., 70x60, st-dye dk. blue, 60's wool	single	S	(N)27K2b	....
Lining, 30-oz.	56 in., 36x36, 3/3 tw., reproc. 50's, OD	s wln	PQ	(A)8-135	....
Melton, 16-oz.	55 in., 62x55, 2/1 tw., dye indigo stock or piece	s wln	S	(N)27M10b	3/42
Melton, 30-oz.	56 in., 36x36, 3/3 tw., 50's reproc.	wln	PQ	(A)8-135	....
Melton, 32-oz.	56 in., 36x36, 55% 44's, 10% 58's noils	s wln	PQ	(A)8-53-A	2/41
Serge, 14-17 oz.	56 in., 80x70, 80x78, 68x64, 104x84	from 70's wool	S	(N)27S10a	....
Serge, 10½-oz.	56 in., 82x72, 2/2 tw., OD, shrd. 64's wool	2-ply wstd	PQ	PQD 31	9/41
Serge, 18-oz.	56 in., 68x54, 2/2 tw., OD, shrd, 64's wool	2-ply wstd	PQ	(A)8-94A	8/40
Serge, 21-oz. W.A.	56 in., 56x50, OD by blending, 58's wool	2-ply w, single f.	PQ	PQD 302	....
Shirting, 10½-oz.	56 in., 52x42, OD, shrd, 60's wool	2-ply wstd	PQ	(A)8-110	12/40
Suiting, 20-oz.	Classes A, B, C, 56 in., 2 2 tw., OD	2-ply wstd, 2-ply wln, s	PQ	(A)8S-39A	....

Among other wool fabrics purchases are: blankets, (F)DDD-B-421a, by Procurement Division of the Treasury Department; shirting flannel, 10-oz., (A) 8-54B, by Emergency Relief Administration.

C. KNIT GOODS, COTTON, WOOL, RAYON

Textile	Construction and Characteristics	Yarns	Bought By	Spec. No.	T.W.
Anklets	circ., 1x1 rib, 12x20, 20 oz./doz. pr.	2-ply wstd	PQ	(A)8-132	....
Bobbinet	52&72 in., 196 meshes/sq. in., 1.5 oz./sq. yd.	2-ply crd	PQ, CS	(F)JJ-N-191	....
Cap	Flat, half-cardigan, 7x15, 7 in. dia., 50's wool	2-ply wstd	PQ	PQD 87A	4/42
Cap	Cir. or flat, cardigan, 6x12, 3½ oz. each	2 or 3-ply wstd	S	(N)73C3a	4/42
Cloth, 26-oz.	54 in., OD, 50's reprocessed wool	s wln	PQ	(A)8-134	....
Drawers	Cotton, merino&wool; 12-24 wales, 20-30 courses	s or 2-ply	PQ,MQ,S	(F)JJ-D-653	1/41
Drawers, cotton	flat knit, 30x32, ankle length	cmb	PQ,MQ	(F)JJ-D-641	....
Drawers, pt. wool	Types I&II, flat or 1x1, 14x20, 25 or 50% wool	s merino	PQ	PQD 74A	....
Gloves	full-fash., seamless, 68-72 needles	3-ply wln	S	(N)73G2a	....

C. KNIT GOODS, COTTON, WOOL, RAYON (Continued)

Textile	Construction and Characteristics	Yarns	Bought By	Spec. No.	T.W.
Gloves, woolen	Sizes 8-11, 4 in. cyl., 64 needles, 56's wool	3-ply wln	PQ	(A)8-60A	6/41
Gloves, woolen	12x14, jersey, OD, w. repel	wln	PQ	PQD 170A	....
Hose tops, W.A.	Circ., lxl rib, 31b/doz. pr., OD	2-ply wstd	PQ	PQD 253A	1/43
Jerseys	Sizes 32-44, babyshaker, 196-280 needles, 56's	2-ply wstd	S	(N)55J2h	....
Lining, 22½-oz.	54 in., OD, napped both sides	wln	PQ	(A)8-118	10/40
Mufflers	Flat, lxl rib, OD chrome	2-ply wln	PQ	(A)8-99A	4/42
Mufflers	lxl rib, 6x11, 9x54 in., 56's, OD or d. blue	2 ends, 2-ply	PQ	PQD 146	....
Shirt	Types I&II, flat or lxl rib, OD, 60's wool	2-ply wstd, or s wstd	PQ	PQD 192A	....
Socks, cotton	3½-3¾ in. cyl., 176-220 needles, 26-30 courses	cmb&merc	PQ,MQ,S	(F)JJ-S-566a	....
Socks, cotton	3½-3¾ in. cyl., 84 needles, 16 courses	crd	PQ,MQ,S	(F)JJ-S-566a	....
Socks, pt. wool	Type I, class A, circ., plain knit 156 needles	2-ends merino, crd	PQ	(F)JJ-S-581a	1/43
Socks, pt. wool	Class A, 3½-3¾" cyl., 160 needles, 25 courses/in.	merino & cmb cot	PQ,MQ,S	(A)JJ-S-581a	4/41
Socks, worsted	Class B, 3¾-4" cyl., 126 needles, 17 courses/in.	2-ply wstd	PQ,MQ,S	(A)JJ-S-581a	4/41
Socks, pt. wool	Class C, 4-4½ in. cyl., 68 needles, 10 courses	merino & cmb cot	PQ,MQ,S	(F)JJ-S-581a	4/41
Stockinet	Types I&II, circ. or flat, 3-54 in., 16-24x24-36	12/1-28/1	Chem	(A)6-51B	....
Sweaters	Class A&B, circ., 7x10, 10x12, 50's wool	2-ply wstd	PQ	PQD 251B	1/43
Sweaters	Types I,II,III; circ., lxl rib, 5x10, 5 or 6 ends	2-ply wstd	PQ	PQD No. 111B	....
Toque	circ. or flat, lxl rib & half-cardigan, 56's wool	2-ply wstd	PQ	(A)8-48A	....
Trunks, bathing	lxl rib, 22x35, 10.5 oz., d. Navy blue	s or 2-ply wstd	S	(N)37T2b	....
Tubing, 13-oz.	lxl rib, 12x18, 18-30 in. double width	2-ply wstd	PQ	(A)8-131	....
Undershirts	Types I&II, flat & circ., lxl rib, 60's wool	merino & cmb cot	PQ	PQD 73A	4/42
Undershirts.....	Types I&II, flat or rib, 30x35 or 24x30, sleeveless	s crd or cmb	PQ	(A)6-233C	8/40
Undershirts	circ., 30x32, short sleeves, shrunk	s double crd	PQ,MQ,S	(F)JJ-U-513	....
Undershirts	circ. flat or rib; cotton, merino, wool; 12-24x20-30	s or 2-ply	PQ	(F)JJ-U-517	4/41
Warp-knit, wool	58-62 in., 21 oz., 0.165 in. thick, nap both sides	single	WF	(AC)16095	....
Wristlets	circ., lxl rib, 50's wool	2-ply wstd	PQ	(A)8-132	2/42& 4/42
Wristlets	circ. rib., 12x20, 10 oz./doz. pr., 56's wool	2-ply wstd	PQ	Invitation	....

Among other knit goods purchased by the Philadelphia Quartermaster depot are the following items for the WAAC: sweaters, PQD 207; scarfs, PQD 261; slip, rayon, PQD 222; panties, rayon, PQD 219; panties, winter, PQD 233; vests, winter PQD 234; stockings, full-fashioned, PQD 206; anklets, PQD 205.

D. MISCELLANEOUS TEXTILES

Textile	Construction and Characteristics	Yarns	Bought By	Spec. No.	T.W.
Braid, branch-mark	Types A,B,C, 10 warp ends of 7 strands, 30 picks, 3/8 in. wide	2-ply cmb	S	(N)71B2a	....
Braid, cord-edge	30-end core & covering of cotton, rayon outer	s crd & cont. fil	PQ	(A)7-15B	....
Braid, elastic	3/4 in., 49 car. mch., 24 w. rubber yn. 60 ppi	2-ply&rubber	PQ	Invitation	....
Braid, mohair	½ in., 37 car. mch., 28 oz., 12 warps, 20 picks	2/30, 2/10	PQ	(A)7-11A	....
Burlap, cotton	Types A-E, 30-40 in., 32-48x28-44, 4.5-8 oz.	singles	PQ,CSY	(F)E-CCC-B-811	....
Burlap	Jute, 40 in., 8x8-13x13, 7.2-10.8 oz.	single	PQ,MQ,CSY	(F)CCC-B-811	....
Camouflage colors	Color sheet of 11 colors	.....	Eng	(A)T-1213B	....
Cloth, banner	318x94, 5 oz., rayon 2/2 tw., vat dyed to spec., w-repel	2-ply	PQ	PQD 191A	....
Cloth, banner	400x116, 3.7 oz., silk organzine 13/15 den., 2/2 (spec. also used for rayon)	3 ends, 3 thread	PQ	(A)7-2A	5/42
Cloth, flare	86-100x86-100, 1.35 oz., porosity 400-500 cu. ft.	50/24 den., ht rayon	AO	(O)AXS-727	....
Cloth, padding	45x32, 7.2 oz., cotton warp, rayon & hair filling	singles	MQ	(M)6/27/40	....
Cloth, paracnute	47-57x42-52, 4 oz., porosity 150±30 cu. ft.	275 or 300 den. rayon	AO	(O)AXS-701	9/42
Cloth, parachute	86-100x86-100, 1.35 oz., porosity 400-500 cu. ft.	ht. rayon	AO	(O)AXS-728	9/42
Cloth, parachute	4.25 oz., elongation max. 15%, porosity 150±30 cu. ft.	ht. or strong rayon	WF	(AC)16126	....
Cloth, parachute	36 in., 1.6 oz., 2/2 tw., thickness .004-in., porosity 80-140 cu. ft., 5% elongation	ht. acetate rayon	WF,A	AN-CCC-C-491	....
Cloth, parachute	36 in., 45x45, 8-oz., porosity 180±40 cu. ft., 18% elongation, weave in spec.	rayon	WF	(AC)16123	....
Cloth, parachute	36 in., 1.6 oz., .0042-in. thick, porosity 100-160 cu. ft., wave 2/1 tw. or plain, 14% elongation	Nylon	WF,A	AN-CCC-C-486	....
Cloth, parachute	Type I, 36-in., 1.8 oz., porosity 80-140 cu. ft., 15% elongation, Type II see AN-CCC-C-486	ht. rayon	WF	(AC)16081-A	....
Cloth, parachute	.....	ht. rayon	O	(N)OS-2363	....

D. MISCELLANEOUS TEXTILES (Continued)

Textile	Construction and Characteristics	Yarns	Bought By	Spec. No.	T.W.
Cloth, silk	36&50-72 in., up to 10 oz., plain or basket	silk	OS	(N)27C4b	....
Cloth, synthetic	36 in., 2/1 tw., 1.5 oz., const. to meet spec.	high-strength	WF	(AC)16103	....
Cloth, uniform	Type III, 39 in., 48x48, 8 oz., OD vat	2-ply spun rayon	PQ	PQD 172	9/42
Cord, Nylon	4&7 end ply-yarn cores, 16&32 car. mch., 18-21 ppi	3-ply	A	(N)M-518	....
Cord, Nylon	Types I, II, III, 16, 32 or 36 carrier, single or double end	3-ply	A,WF	AN-C-63	....
Cord, hat	18-end core, merc. binder, rayon outer	rayon&ply cot	PQ	(A)34-8B	....
Cord, sash	Types A&B, sizes 6-12, 225-560 lb. carded str.	carded	PQ,CSY,JQ	(F)T-C-571a	....
Cord, braided	Types A-D, core type, 16 carrier, moisture repel.	ht. rayon	AO	(O)AXS-707	....
Cordage, braided	16 carrier, 4 sq. m.m. area, moisture repel.	ht. rayon	AO	(O)AXS-728	....
Cordage, Nylon	Types N1-N4, 32-car. mch., 3-ply core, 70-275 yd.	Nylon	WF	(AC)16111	....
Cordage, silk	32-car. mch., 4-7 end core, 70-275 yd., 100-450 lb.	3-ply	WF	(A)7-12-D	....
Fabric, gas resist	Water resistant, gas-resistant finish synthetic rubber, cloth covered in spec. 6-39	cotton	WF	(AC)16112-A	....
Fabric, impregnated	Two types, camouflage, pigment colors, insol. cu. comp.	.....	Eng	(A)T-1212	....
Fabric, tow target	.....	ht. rayon or Nylon	WF	(AC)16129	....
Felt, pressed	45-100% wool, 48's-64's grade; 36-72 in., 6-131 oz.	.....	WF	(A)8-15E	12/41
Felt, pressed	54-72 in., 6-68 oz., 0.055-0.500 in. thick	wool, cotton, etc.	PQ,AO	(A)8-15G	....
Laces, legging	9-strand braided, 8 ends/strand, 8 st./in.	2-ply crd	S	(M)72L2	....
Laces, trousers	33 carrier, 3 end per bobbin, 3/8 to ½-in.x36 in., 6.25 oz. per 100, black	150 den.	S	Invitation	....
Lining, rayon	40-41 in., 182x70, 5 oz., 5-har. w. satin, OD	cont. fil.	PQ	(A)7-19	9/41
Lining, rayon	142x66, 4.4 oz. viscose, or 4.2 oz. acetate	150/40	PQ	PQB 301	.....
Lining, satin	41 in., 220x76, 6 oz., 5-harness, black	150/40 den.	S	(N)27L9	9/42
Lining, twill	41 in., 160x72, 2/1 tw., black	150/40	S	(N)27L	.....
Mildewproofing	Fabrics, threads & cordage, sandbags, insol. cu comp.	.....	Eng	(A)T-1452	.....
Neckerchief	144x100, cord of 3 ends, black spun-dyed	acetate	S,CG	(N)55N2f	9/42
Neckties, steward	240x76, 5 oz., barathea, black	75 den. acetate	S	(N)73N1c	.....
Neckties, four-in-hand	Same as 73N1c, lining 36x36, 6 oz. worsted	2-ply wstd & s	S	(N)73N2c	.....
Padding 5.5-oz.	35 in., 36x28, pl. weave, fully shr., perm. finish	s flax & cotton	MQ	(M)10/31/41	.....
Padding, 7.2-oz.	45x32, pl. weave; cotton, hair & rayon; unblchd	singles	MQ	(M)6/27/40	.....
Parachute cloth	36-in., pl. or 2/2 tw., const. to meet requirements	silk	AOS	(N)27S9e	.....
Parachute twill	36-37 in., 1.6 oz., 2/1 tw., const. to meet spec.	silk	WF,A	AN-CCC-S-371	.....
Ribbon	1½ in., 180x90, black, acetate	75 den, 19-26 fil.	S	(N)27R2a	.....
Sheeting, coated	36-54 in., 56-64x60-68, 12 oz., thickness 0.014 in. ±0.001, syn. resin, colors as spec.	cotton	Med	(Med)1614B	.....
Shroud lines	Braid 16 ends, moisture resistant	ht. rayon	AO	(A)AXS-707	.....
Tape	.....	Nylon w, cot. f.	WF	AN-DDD-T-106	.....
Tape	¼-1 in., 7-30 ends, 20 ppi, 16-67 oz./gross	20/3/4,24/2 cmb	WF,A	AN-DDD-T-91	.....
Tape	¼-1¼ in., 28x40 to 135x40, 2/2 h'bone tw.	20/1&30/1	PQ,MQ	(F)DDD-T-86	.....
Tape, 3/8-in.	41 carriers, 25 picks, 9 oz., blchd	2-ply crd	PQ	(A)6-258A	.....
Tape, cotton	3/16-1 in., 25-94 ends, 28-70 ppi, plain&tw.	s&2-ply	SC	(N)27T11a	.....
Tape, silk	1 in., 33x11, 85-110 yd., sp. silk warp, cot. fill.	2-ply	WF	(A)7-13-F	.....
Tape, rayon	Types I&II, flat & tubular, ½ to 1 1/8-in., 32-100 yd./lb., 30–36 picks	ht. rayon	WF	AC16125A	.....
Thread	3-ply, 3,500-18,000 yd/lb. Cord sizes 3-8, 3-8 ply, 700-2,000 yd/lb., elongation 16–20%	Nylon	WF	AN-T-9	.....
Thread, cotton	4,6,11-ply cmb (single yarns approx. 8-16's)	.....	A	(N)T-82	.....
Thread, cotton	Mch., basting, heavy threads, 520-25, 750 yd./lb.	2-10 ply	JQ,PQ, CAOS	(F)V-T-276b	.....
Thread, Fortisan	3-cord, Z tw., 11,500 or 5,100 yd./lb.	.....	A	(N)M-527	.....
Thread, linen	3-cord, lock-stitch-twist, handshoe threads	3's to 60's	WF,JQ	(F)V-T-291a	.....
Thread, silk	Mch. twist, b'hole tw., sewing, embroidery type	ply & cord	JQ,WF, CAOS	(F)V-T-301	.....
Thread, synthet.	3-&5-ply, 4-10 turns Z, 1,200 to 5,600 yd.	.....	WF	(AC)16117	.....
Wadding, cotton	5 in., 18 in., 36 in.x6 yd., 1.6 oz., glazed	crd, nonab-sorbent cot	PQ	(F)CCC-W-51	.....
Webbing	Types I-VI, ½-7 in., 0.2-4.8 oz.	ply, crd or cmb	AO,WF	(A)6-185C	.....
Webbing	Types I-VI, ½-7 in., 70 to 4,500 lb. str.	plied crd/cmb	PQ,JQ,WF	(A)6-185C	.....
Webbing, cotton	1.25, 1.75 in., .36, .70 oz. per yd., OD	.....	JQ	(A)6-186	.....
Webbing, cotton	11 types, 9/16-5 in., 10-20 ppi	crd or cmb	WF	(AC)16109-B	.....
Webbing, cotton	Types C-1 to C-12, 9/16 to 5 in., 0.40-4.65 oz.	crd or cmb	WF,A	AN-JJ-W-151	.....
Webbing, Nylon	Classes N-1 to N-10, 9/16 to 5 in. 0.40 to 3.40 oz.	ply & braided	WF	(AC)16107	.....

Among other miscellaneous items purchased are: cordage (several types) by Army Signal Corps; elastic webbing (A) 6-53B, by WF, Chem; manila rope, (F) T-R-601a, by Baltimore Quartermaster Depot, Coast Artillery, Eng; twine (several types) by JQ, Ord.

A HANDBOOK *for* EMPLOYEES

WHAT?

A compilation of the facts of life in a specific company

WHY?

To answer the questions which arise in the employee's mind

HOW?

Written simply, briefly, and from the standpoint of the employee

TEXTILE WORLD PRESENTS A SAMPLE HANDBOOK

The earliest prototype of a handbook for employees of a textile mill which we have seen expressed the pious hope—amounting to a command—that the workers would not fritter away their off-time in the evenings but would devote it to the improvement of their minds, and to sleep and clean living, all of which would make them that much more able to deliver a 13-hour performance during the 12-hour work-day which was so soon to dawn. Later versions of that type of a handbook took the form, for instance, of a placard: "Don't spit on the floor!"—or an admonition to vote for Ike Butler for Congressman. The fact that the epilogue "or else!" was omitted was due to two reasons: (1) "Or else!" was not then a part of our language; and (2) the employees knew damned well what the alternative was.

Sadly enough, many of the early Employees' Handbooks, and many of them dating down almost to this day, dealt with the negative aspect: Don't do this, or that! They were in the form of the Ten Commandments. They told employees what *not* to do.

And so, before we answer the question "Why an Employees' Handbook?" we must dispose of the question "Why *not* an Employees' Handbook?" The answer is easy: If you haven't any other reason for such a handbook than to list your pet prohibitions, skip it! Let your superintendent and overseers enforce the mill-law, and save the printing cost.

Also, if you can't divest yourself of a stuffed-shirt attitude, skip it! Don't try to tell your employees how lucky they are to work for such a wonderful company, and how hard they ought to work to deserve such good fortune. Their answer, sub rosa, would be "NUTS!"

So much for the negative.

On the positive side of the question "Why an Employees' Handbook?" here is the answer: The reason for its being is to supply to each employee, new or old, the facts of life in the Smith Textile Mills Co. (Let's call it Smitco, for short.) Through the Handbook, he or she should expect to find the answer to all the main questions which arise during the working hours, and to some extent after hours, at Smitco. And those answers should be straight-line answers. They should go from here to there, in the shortest distance between two points.

That leads to, and in fact has already intruded upon, the next question: "And how?"

The "how" is the guts of the problem.

Here are a few basic principles to follow:

1. The Handbook should be written in simple language, with each thought clearly and positively expressed. If some one in your organization has the ability to write in a somewhat lighter vein, so much the better. But in no event should there be a tendency to "write down" to your audience, or to adopt a patronizing tone.

2. Each sentence must be examined to make sure that, insofar as humanly possible, it is written from the standpoint of the employee, rather than from that of the company.

3. The book should be pocket-size; as brief as is compatible with completeness; printed in easily legible type; and preferably enlivened with simple illustrations.

4. The Handbook should be prepared for the dual purpose of serving as an introduction for the new employee and as a continuing reference-work for all employees.

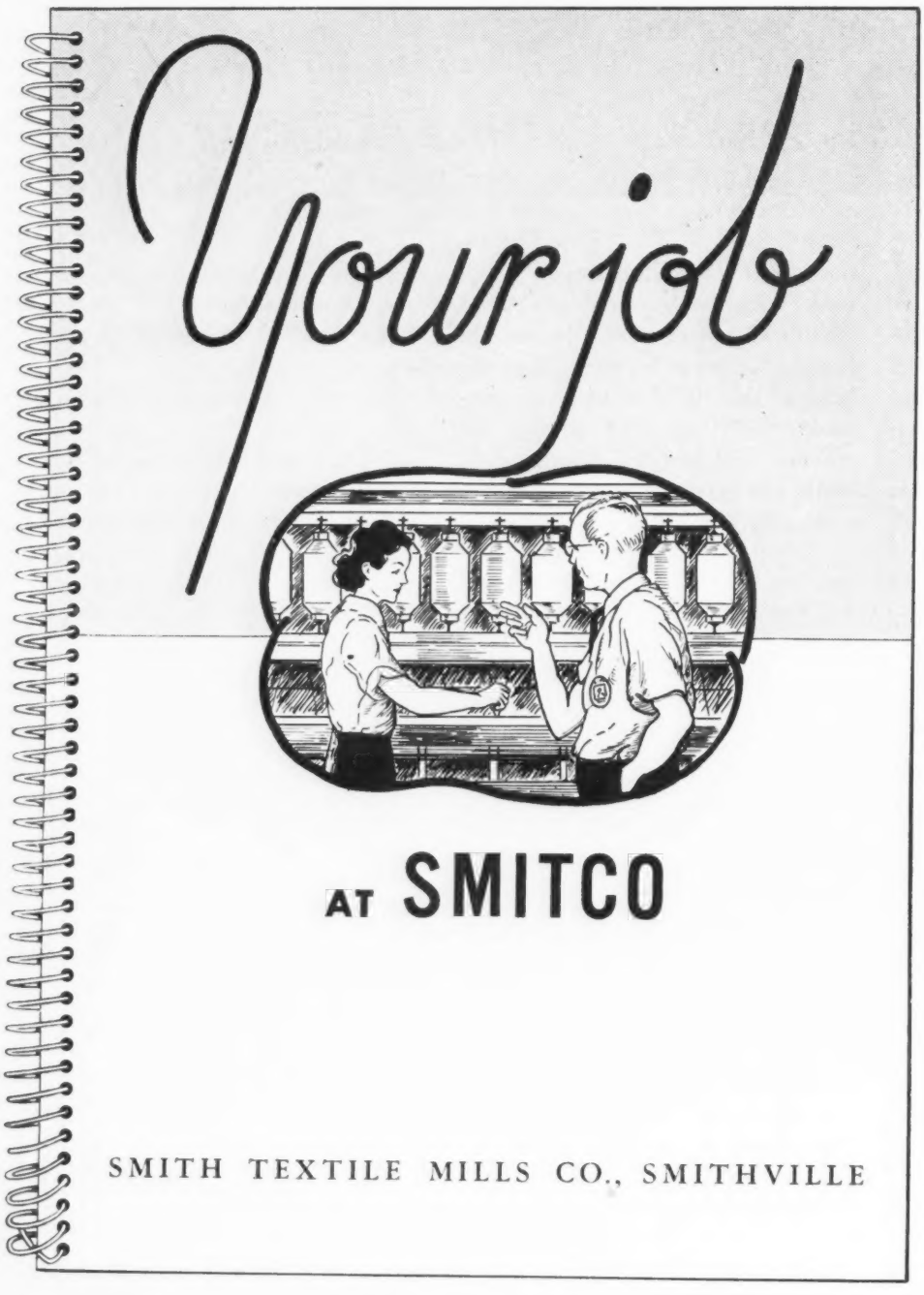
5. Keep always in mind this fact: His working hours with your com-

pany represent a very large and important part of the life of each of your employees. The extent to which you can help him get the most out of those hours, with the minimum of friction, will determine not only his efficiency as a worker but his progress as a responsible and constructive force in his community . . . And an Employees' Handbook is one tool—and a very useful one—toward that end.

* * *

That is why TEXTILE WORLD, in this special section of its 1943 Annual, presents a sample Employees' Handbook which textile manufacturers may use as a basis for study, before they start to "roll their own." It goes without saying that this is not offered as a canned job which, with the substitution of the company name, can be used as its Handbook. On the contrary, such a book should reflect the individual conditions and "personality" of the company concerned. However, there are certain features which are found in all good Handbooks. Consequently the editors of TEXTILE WORLD have examined a number of these, and have prepared a basic structure which its readers may use as a guide. Such is the function of the handbook of the mythical Smitco presented in the pages that follow.

Always a vital part of the management policies, employer-employee relations are more important now than ever before. They will become increasingly so during the remaining war years, and in the post-war adjustment. Consequently, under present conditions, an informative book about your company, for your employees, would seem to be a "must" in all except the small, family-type of company.

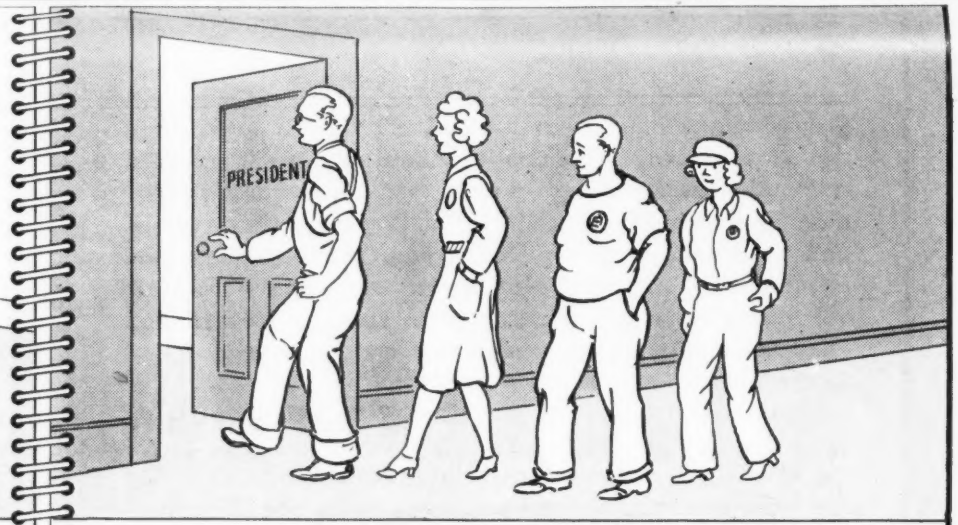


A SAMPLE HANDBOOK for EMPLOYEES

THE COVER

This is the cover for TEXTILE WORLD's sample handbook, prepared for the employees of the mythical Smith Textile Mills Co. The handbook itself is presented on the following pages. It is a guide to the actual writing of a handbook, which however must be modified to conform with the conditions in the specific mill concerned.

"And don't forget . . .



my office door is always open!"

Our Job AT SMITCO

Our job at Smith Textile Mills Co. (Smitco for short) is a most important part of our lives. It occupies a good many of our working hours. Friendships made at the mill loom large in our leisure time. The extent to which we are happy in our work determines to a considerable extent the degree of happiness we, and consequently our families, achieve at home.

Therefore, the more we know about Smitco, the happier we shall be! The more we learn about the rights and privileges of life at Smitco, the more freely we can use them.

This little book has been prepared for the purpose of giving all of us such facts. Those of us who have already seen service with Smitco will find it useful as a reference book. Those who are just now joining Smitco will find it valuable as an introduction to life here.

This book is not a professional job. It was prepared by all of us, in that it answers the questions which we Smitco employees ourselves asked. If any have been missed, the superintendent and overseers will be glad to answer them. And don't forget my office door is always open!

On behalf of the older members of the Smitco family, I want to say to each of you newcomers: Pleased to meet you! Make yourself at home!

John Smith

President, Smith Textile Mills Co.

1—Employment

How to Get In

In the old days, applicants for jobs in many mills lined up at the gate before starting time and waited, often in the rain, until the overseer of a particular department came out and picked the number of men and women he needed that day. Too often the lucky ones were his friends. The others shambled back home. Smitco has faced this question: How can men and women who want

jobs here find them with the least inconvenience, and also be sure that they are in the place where they can get along best, and be happiest? The answer is our Personnel Department. This Department has been trained to examine applicants fairly and to place them wisely.

Here is what you do if you want a job at

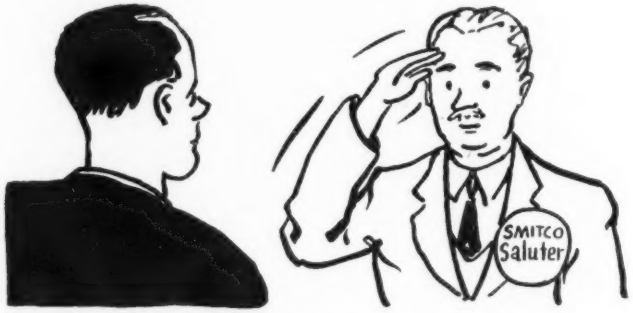
Smitco: Apply at the Personnel Office, located in the Personnel Building at the East Gate. To save your time later on, it is advisable to have evidence of U. S. citizenship with you. If you have any letters of recommendation from overseers or others who know about your ability, bring these along and they will be considered carefully. However, in fairness to all, no applicant is ever employed merely on the basis of friendship or relationship.

At the Personnel Office you will be asked to fill out an application blank and then will be interviewed by the Personnel Manager or one of his assistants. You will then be given a free physical examination. Next you will be interviewed by the head of the department for which your experience and ability qualify you. If approved by both the Personnel Manager and the Department Head, you are ready to join the Smitco family. If a job is open, you can start at once; if not you will be notified to report when one is open.

At any rate, now you're in—and you're one of us.

What You Do First

The first day on a new job is one of the most important occasions in a person's life. The first impressions he gets of the job, and that his fellow-workers get of him, mean a lot. Consequently we at Smitco have given a lot of thought to the handling of those first hours. We have trained a special group of men and women whom we call



"Smitco salutes you"

the Smitco Saluters. But they do more than greet the newcomers; they show them the ropes.

Here is the way it works: When advised to report, the new Smitco member goes first to the Personnel Office. After a little chat with the Personnel Manager or one of his assistants, he is turned over to a Saluter. Male employees are guided by men, and female employees by women.

After getting acquainted, the first order of business is taken up. Since Smitco is working on Government contracts, it is necessary—under the law—that all employees, old as well as new, be fingerprinted and photographed. After receiving his identification badge and time-card, the newcomer is then conducted on a tour through the mill. This is for several purposes: (1) To give him a bird's-eye view of the mill as a whole, its processes and its products; (2) To show him the location of rest-rooms, cafeteria, first-aid rooms, and other agencies which he will use. The tour ends up

with a visit to the mill office, and a hand-shake with the president, if he is in, and with the superintendent. Then the guide conducts the new Smitco worker to the department where he will work, and his overseer will then take over and explain his duties to him. But the guide stands ready to be of personal service at any time in the future. These Smitco Saluters have been specially trained by the Personnel Manager and represent an important link between that department and the men and women in the operating departments. In fact, the Personnel Department at Smitco is not just a hiring and firing agency; it is a personal-service agency for all Smitco employees.

Yes, You Get Paid

Friday is pay-day at Smitco. Every Friday morning, you receive a pay envelope for the previous week's work. The delay is due to the fact that it takes several days to compute the pay roll. But of course, if you should ever leave Smitco—which we hope you won't—you will get in your final envelope the pay for those intervening days.

"Friday is always lucky at Smitco"

The amount of your pay and the date is marked on your pay envelope. Also noted on the envelope are the amounts deducted, by law, for Social Security and for the Victory Tax—also for any other deductions which you may voluntarily desire, such as War-Bonds, etc.

If by any chance you are absent on Friday (pay day) you may get your pay on the first day of your return by applying at the Paymaster's window between 3 and 4 p.m.

Plus Extra for Overtime

And when it's occasionally necessary for us all to work overtime, employees on an hourly basis or on piecework working more than 40 hours in one week are paid for overtime at the rate of time and a half.

Hours

At the present time, due to war demands, Smitco is operating on an 8-hr. day and 40-hour week, with three shifts. Regular hours are:

First Shift..... 6 a.m. to 2 p.m.
Second Shift..... 2 p.m. to 10 p.m.
Third Shift.....10 p.m. to 6 a.m.

The Smitco management has always given a lot of time and thought to keeping its employment as steady as possible. Its record is one of the best in its industry and in its community. Toward

"If you need time off, you'll get it"

that same end, it is necessary for all of us in Smitco to be as regular in attendance as possible. When one or more workers are absent off and on, it interrupts the schedule of the department. Consequently, for the protection of the majority, it has been found advisable to make absence of three or more days, without satisfactory reason, cause for dismissal. But, remember that, if you really *need* time off, all you have to do is to ask your overseer. If your reason is a good one, you'll get your time off. So there's really no necessity of anyone getting dismissed for violation of this rule.

Holidays and Vacations

Here at Smitco we regularly observe the following holidays: New Year's Day, Washington's Birthday, July Fourth, Labor Day, Thanksgiving Day, and Christmas. (For the duration of the war,

however, it may be necessary to keep the plant open on some of these days.)

All employees who have been with the company for one year or more on July 1 are granted one week's vacation with pay during July or August. Your overseer will ask you your preference as to time, and then arrange the schedule for his department, to the convenience of the greatest number. (War demands may make it necessary to substitute for a vacation a bonus of a week's pay.)

Up the Ladder

The trend at Smitco is upward. Promotion is from within the company's own ranks. Whenever positions of responsibility are open—second-hands, overseers, superintendents, etc.—preference is always given to persons already employed by the company. Everybody from the president on down is interested in seeing the "best folks go the furtherest fastest."

Here are a few tips on what it takes to go up the ladder:

"The trend is upward at Smitco"

1. Do each task assigned to you better than the average worker does it.

2. Get full instructions about your job from your overseer. Never hesitate to ask him questions.

3. Go to a vocational school and learn more about the textile industry. Ask your foreman how to enroll.

4. Lend a helping hand to fellow employees in your department.

5. Support your overseer. Be a booster for him instead of a knocker. And then, when you get a job like his, others will be boosters for you.

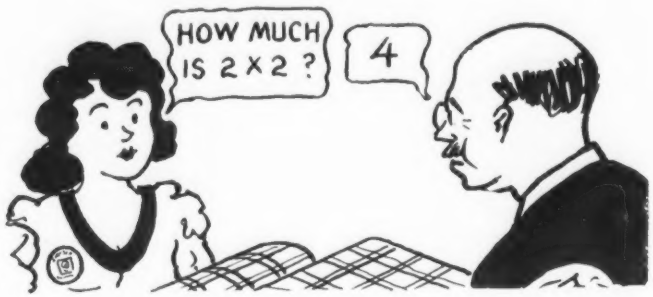
Try these things and watch yourself go up the ladder!

Transfers

In addition to moving upward, you may also move around at Smitco. No employee need feel that he is set for life in a particular job. It sometimes happens that men and women feel they are better qualified for, or prefer, some other type of work than that which they are doing. If so, the first thing to do is to have a frank talk with your overseer—and then with the Personnel Manager who is specially trained to judge people's fitness for particular jobs. If he determines that a transfer would be advisable in your interest and that of the company, you'll get it all right.

Your Overseer

Your overseer has been through the mill and knows the answers. Consequently he is the one to whom you should go when you are looking for guidance and instruction. Look on him as your friend, and also remember that it is a part of his job to discuss your problem with you. He is as anxious for you to get started right and to stay happy as you are yourself. He can't be successful unless you are. Your interests are mutual. Do a job together.



"Your overseer knows the answers"

2—Health and Safety

Watch Your Step

"In war-time, carelessness is treasonable"

If we're fussy about one thing here at Smitco, it's safety. Of all the useless waste in the world, the loss of limbs or eyes or life through carelessness is the least excusable. This is true at all times; in war-time carelessness is treasonable. So we have tightened up all along the line, and our Safety Rules now are really tough! All of us like to give ourselves and our fellow workers a chance to "live their own lives and express themselves" but this doesn't extend to safety.

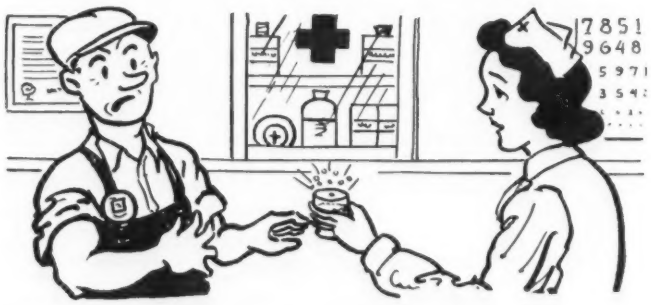
The Safety Committee, composed of the superintendent, the overseers, and employee representatives from all departments, have printed these Safety Rules in a separate pamphlet, a copy of which is given to each worker. Learn yours by heart. If you lose it, ask your overseer for another one. Look where you're going, what you're doing, and how you're doing it!

But If You Should Slip!

Then advise your overseer and report immediately to the fully-equipped first-aid room and infirmary in the Personnel Building. A registered nurse is in constant attendance during working-hours, and a doctor is also there between 3 and 5 p.m. daily.

And when we say "advise your overseer" we mean it. No matter how slight your injury may seem to you, failure to observe the above procedure may jeopardize your chances of obtaining compensation should complications result. Keep reporting for treatment regularly until dismissed by the nurse or the doctor. Under no circumstances should an employee treat his own, or another's, injury.

Under the State Workmen's Compensation law you are entitled to payment for time lost due to personal injuries received during the course of employment or as a result of occupational diseases.



"She treats tummyache too"

The Plant Nurse and the Personnel Manager will assist you in making out the necessary forms and presenting claims for compensation.

Cases of sickness or indisposition occurring during working hours may also be referred to the Plant Nurse for whatever assistance or relief she may be able to provide.

Plant Protection

Smitco has taken effective steps to protect you against air raids and other possible hostile acts by the enemy. The Smitco Plant Defense Organization is headed by A. J. Jones, the chief engineer of the plant. In event of an air raid or similar emergency Mr. Jones has complete charge of the protection of the entire plant. Defense Headquarters have been established in his office. Under Mr. Jones are Aircraft Spotters, Telephone Operators, Messengers, Guards, Service Squads, Fire Squads, First Aid Squads, and Morale Officers. All members of the Defense Organization have been furnished with arm bands, which they wear during air raids or practice so that you can easily identify them. During emergencies or practice for emergencies, employees must follow any instructions given by the Morale Officers. Many of our employees have taken training courses and are now members of a First Aid Squad, Fire Squad, etc. If you want to become a member of the Smitco Plant Defense Organization, ask your overseer or foreman how to enroll in one of the training courses.

3—This and That

Group Insurance

"Free for nothing"

After one year of continuous service, each employee is presented with a life insurance policy of $500, the premium being paid by Smitco. The policy increases in value at the rate of $100 a year until it reaches $1,000. No physical examinations are required, there is no age limit, and you pay no part of the cost. All you have to do is to specify who your beneficiary is to be. In the event of death, this insurance is paid promptly to the beneficiary. Or, if you become permanently 60, the full amount will be paid to you in a lump and totally disabled before you reach the age of sum or in installments over a period of two to five years as you may prefer.

Training Courses

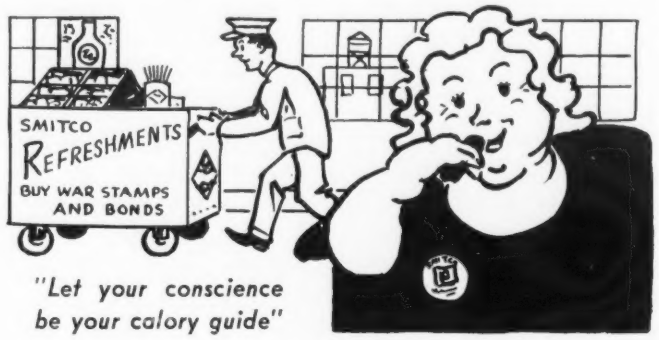
Training of new employees at Smitco is carried out by the various overseers and foremen or by experienced instructors selected by them.

Practically all the overseers and other job instructors have themselves attended special classes designed to teach them how to train new workers in a simple, effective, and rapid manner. Ask your overseer how to get in line for such training.

When Do We Eat?

A cafeteria for the convenience of our workers is located on the third floor of the Personnel Building. It is open during the lunch hours for the first, second and third shifts, and for 30 minutes before the start of each shift. Good food, well prepared, is served at reasonable prices. Lunches brought from home can be eaten there under more pleasant conditions than in the mill. As no smoking is permitted in the mill, a smoking room has been provided adjacent to the cafeteria. The smoking room is open during periods when the cafeteria is open.

And refreshment carts are operated at Smitco



"Let your conscience be your calory guide"

for the convenience and refreshment of the employees. These carts are not owned or maintained by the company, but the privilege is leased to people who furnish the best products and service at a cost not higher than would be paid outside the plant.

Suggestions, Please!

Smitco wants suggestions from its employees on improvements in working conditions, methods of manufacture, quality of product, and similar matters. For each original suggestion that is adopted a reward of $5 or more will be paid. You will find suggestion blanks and suggestion boxes near the bulletin board in your department. If you have a suggestion you would like to submit, write a description of it, including a rough drawing or sketch if necessary, on one of the blanks. Sign your name, giving badge number and department at the bottom of the blank; and drop the blank in the suggestion box. The blanks are collected, and turned over to the Chairman of the Suggestion Committee. All suggestions are carefully and impartially investigated by the Committee. Those that have merit and are adopted

"Easy money"

are paid for by the company in proportion to the savings it is estimated they will effect. If the suggestion is not expected to make a direct saving, but is expected to improve working conditions, an award of $5 or more will be paid. As soon as possible after receipt of your suggestion, the Committee will inform you whether or not the idea is usable and will be adopted. If your first one doesn't ring the bell, keep on trying; you'll make it eventually.

Bulletin Boards

The bulletin boards are a means of official communication with employees. It helps to watch the boards and read all notices.

War Bonds

Be thrifty. To make it easy for you to buy War Bonds, Smitco has a payroll allotment plan, whereby a certain sum is taken out of your envelope regularly.

The Credit Union

This permits both systematic saving and borrowing at reasonable interest rates in emergencies or for legitimate purposes. Ask the Personnel Manager about this.

What Else Do You Want To Know?

We have touched only the high-lights in this booklet. Ask your overseer, and the Personnel Department, anything else you want to know. Some of your questions, and the answers, will find themselves in future revised editions of this Handbook.

Acknowledgment

Among the Employee Handbooks we have examined, and from which we have secured ideas which helped in the preparation of the foregoing sample handbook, are:

"You Have a Right to Be Proud"—*The Kendall Co.*
"You Belong to the Bibb Family Now"—*Bibb Mfg. Co.*
"51 Questions and Answers About Callaway Mills"
"Your Job with Universal"—*Universal Winding Co.*
"Your Job with M M & M"—*Manning, Maxwell & Moore, Inc.*
"At Work with Atwood"—*Atwood Machine Co.*
"Welcome on Board"—*The Namm Store*
"My Book"—*McGraw-Hill Publishing Co.*

We have also read with interest and profit the National Industrial Conference Board report on "Employees' Handbooks."

My Job WITH SMITCO

Date Employed .....

Department .....

Badge No. .....

Social Security Number .....

Group Insurance Status .....

Transfers and Promotions .....

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Notes .....

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Textile World

DOUGLAS G. WOOLF, EDITOR

"I Am but One, but I Am One"

IN WAR-TIME, as in all times of emergency, a sense of futility comes over the individual. The part he can play seems negligible; consequently it often is neglected. He asks himself, consciously or subconsciously: "What does it matter what I do in a global war, involving hundreds of millions of people all over the earth? What can *I* do to help?"

The man or woman in uniform, alone, has no such misgivings. Even, and sometimes especially, the parents of those in the services have a feeling of frustration. Any part they can play seems so small compared with that which their loved ones, on far-flung battle-lines, are performing.

"What does it matter whether I do this or don't do that? After all, I am only one."

The answer is found in the heading of this editorial: "I am but one, but I am one." We don't know who first said that, but it is the complete answer.

This war will not be won by masses of individuals as masses, but by the individuals themselves. The Axis has its herd of necessarily blind followers; the United Nations have their individuals. The difference between the two is already being felt all along the battle-front. But it is going to take a quickening of the consciousness of each individual if we are to win the war speedily, and save countless and priceless human lives.

This is the theme we emphasized a year ago in these columns when we reported on the "It All Depends on Me" movement in Great Britain. Just recently we received from the organizer of that movement a 1943 diary titled "Individual Responsibility" carrying quotations from men in all strata of life in that country, from George VI down. The part of the individual there in the winning of the war is no longer a vague question; it is well-defined—and, more important, it is being played. England stands today, merely because *each* of her citizens was determined that she *should* stand. It took time for England to learn that lesson; and it took Dunkirk and bombs. Must we wait for bombs or for our own Dunkirk before we too shall learn it?

HOW CAN WE START to make the role of the individual potent?

It can best be done by relatively small groups. The community is the ideal unit to begin with. Each hamlet or town or city must become a completely self-contained war-making organization. It must be organized as nearly 100% as possible in war-bond savings, in civilian defense, in support of local war industries, in utilization of man-power, in preventing black markets, in consumer education, in morale maintenance, and in all the other jobs in this complicated business of modern warfare. It must be organized by sections, and by blocks. Some towns and cities have performed miracles; most have still a long way to go.

Similarly, individual industries and trades must create an inward consciousness of the part each individual within their scope must play. This, again, best comes down, for ultimate performance, to the individual unit. Each company, large or small, must make each of its employees realize that "it all depends on me." To do that, each executive of each company must first realize himself that "it all depends on him."

Similarly, every labor union, every agricultural group, every profession, must do exactly the same thing.

Beyond that, every State and the Federal Government itself must recall that this is a war of individuals, and not of bureaus. That, possibly, is the most difficult lesson of all. But such a realization would do most to move our war-making into the zone where it belongs and where we can win: the fight of free people against enslaved nations. Centralization of power in war-time is necessary; but that centralization must be based on the humble thought that such power is used by Government, not as a body in itself, but as the agent for 130,000,000 free people. That is a fine point, we admit, but anyone who has watched Washington work during these last two and a half years knows how vital it is that every member of every war agency should get a new concept of his relation to the war effort.

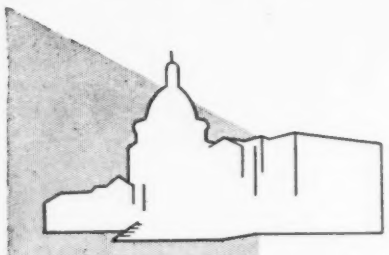
I AM BUT ONE, but I am one. Out of that idea will victory be born. There will be ceaseless demands on each individual's patriotism and patience and courage. As it gets tougher, it is essential that every man, woman and child knows that everything he or she does to help win the war *does* help win the war, and that everything left undone means the useless death of more American boys.

That, very simply, is what "It all depends on me" and "I am but one, but I am one," really mean.

Douglas G. Woolf

Lend-Lease Need Is Big but Vague

1943 textile exports, not to our own forces, may reach 3,000,000,000 yards



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By BLAINE STUBBLEFIELD

"**IF YOU WERE** on the inside you couldn't put down any worthwhile figures." In those words one official summed up the 1943 Lend-lease outlook.

From that point of view, Lend-lease this year, in textiles as in other goods, depends almost entirely upon unpredictable military events.

But from another point of view, figuring that the best we can do in any case will not be enough, you might assume that we would start now to build the biggest possible stockpile of textiles, and distribute it as time and the fortunes of war may indicate.

That assumption is the correct one, in the minds of most officials working on the job. They don't know which Lend-leasees will need how much of what. But neither do they know, yet, just how the necessary stockpile is to be produced. One thing they know, or have been told: The goods have to be produced.

The Lend-lease setup is difficult to pull together. Mr. Lehman's international relief office helps to estimate the requirements, and is responsible for distribution. Lend-lease itself is the financing agency, and also helps to figure requirements. And the textile part of Lend-lease, being non-munitions, is procured by the Treasury Department.

There you have a three-way complication, to say nothing of the Army's and Navy's say in the matter—and that isn't all. The supply of goods to foreign countries in need is not *all* Lend-lease. When the recipients have something to swap, it's barter, and if they have money, it's a sale. So, even if you knew some conclusive Lend-lease figures, you wouldn't know much.

WASHINGTON'S IDEAS on Lend-lease requirements are fairly informative. For instance Frank L. Walton, textile director for WPB, says it is safe to assume that our military and foreign shipments will increase. He seemed to indicate that the increase would be moderate, and his estimate that civilian supply should not fall more than 10%, seemed to line up with moderation.

Our total export in 1943, informed persons estimate, not for quotation, will be two or three billion yards of cloth, nearly all cotton, with some rayon. This does not include exports to our own forces.

The two or three billion yards export, would be substantially, but not all, additional production. A small part of it will be deducted from U. S. civilian allowances; a considerable amount will be savings from an expanded simplification and standardization program, which you will soon hear more about. But probably more than half of it will have to be additional production.

Officials frankly admit that this is a very hard problem. In general they see no serious shortage of fiber, though they do have their eye on cotton waste, formerly shipped abroad, a quantity sufficient to make about one billion yards of rough cloth.

The big problem is machines and manpower. They seem to place their hopes (as men often do) on women. Millions of women still can be pressed into labor ranks. Some planners emphatically hope that the labor unions will make new concessions allowing tenders, loomfixers and people all along the line, to produce more goods per worker-hour.

Even the unemployed Puerto Ricans have been thought of as helpers. Lend-lease peoples who know how to weave may be supplied with America-spun yarns.

All sorts of tricks are being thought up. WPB recently ordered several million yards of osnaburg put through nappers for Lend-lease delivery as a flannel substitute. Another idea for producing warmth without wool is to quilt some fabrics with cotton waste.

One reason why it is hard to get any commitment out of Lend-lease bosses at the time of this writing is that Congress is starting an investigation of the whole program. This probe probably will not get anywhere. The isolationists are trying to discredit the principle of Lend-lease, which is: That we outfit others to help kill our enemies—a scheme that has overwhelming public support. But the investigation makes the planners cautious.

THE SIMPLIFICATION and standardization program mentioned above (see page 68, TEXTILE WORLD, January, 1942) is getting closer to completion. Mr. Nelson says that a full-scale program of simplification will be announced shortly. Doubtless it will include textile plans already formulated. It seems probable there will be a textile and clothing simplification bureau, fitting in with WPB, OPA. It will be expected to save great quantities of cloth, and man and machine hours.

Increasing demands for production from the hard-pressed textile industry emphasize again the importance of repair and maintenance parts. In reply to many inquiries concerning priority for parts, WPB issued a clarifying statement saying "No authorization is needed for production or purchase of repair or maintenance parts for textile machinery. Interpretation of Order L-215 (textile machinery) makes it clear that limitations in the order apply only to parts produced or purchased for improving, expanding, or adding to machinery. Parts needed for repair or maintenance purposes can be purchased without regard to provisions of L-215, and no authorization form or other application need be filed with WPB for this purpose." Any person who has trouble should ask for a priority rating.

At press time, the Department of Agriculture and WPB were still debating whether WPB's textile division would retain control over fibers, or whether Agriculture would take them over. Agriculture contends that cotton and wool are inseparable from the Food Administrator's office because both are farm products. Textile industry seems to feel it is better for fiber to stay with WPB, along with textiles.

Fabrics For Military Purposes

Manufacturing and finishing procedures for four types of Navy wool blankets

WOOL BLANKETS of four types purchased by the Navy are covered in Navy Specification 27B7c. The four types are: Type A, Officers' bed blankets; Type B, Officers' berth blankets; Type C, Hospital blankets; Type D, Crews' blankets. All types shall be entirely of fleece wool or pulled wool, of not less than 56s grade (United States Standards), and shall be free from shoddy, flocks, waste, noils, vegetable matter, and other impurities. The body of the blankets shall be of an unbleached white color.

Detail requirements. Blankets shall be of the following widths and minimum weights:

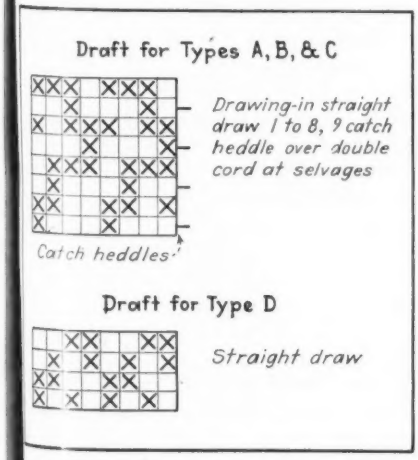
Type	Width	Weight (minimum)	
	In.	*Lb.*	*Oz.*
A	72	4	6
B	66	4	0
C	66	4	4
D	60	3	12

Types A, B, and C blankets shall have a double filling. The weave of Type D blankets shall be either a 2-up and 2-down straight twill, or a 2-up and 2-down broken twill, running two to the right and two to the left.

Blankets shall have the following minimum threads per inch and breaking strengths:

Type	Threads per inch		Breaking strength	
	Warp	Filling	Warp	Filling
			Lb.	*Lb.*
A	34	34*	45	45
B	34	34*	45	45
C	34	34*	45	45
D	40	44	60	55

* Total threads.


Draft for Types A, B, & C
Drawing-in straight draw 1 to 8, 9 catch heddle over double cord at selvages
Catch heddles
Draft for Type D
Straight draw

Suggested drafts for Navy blankets

Other requirements; methods of sampling, inspection, and tests; and directions for packaging, packing and marking for shipment are given in the specification.

Manufacturing and finishing details, not included in the specifications, which will serve as guides in production of these blankets follow:

Manufacturing—The wool may require carbonizing or burr picking.

The stock should be well mixed before going to card room. The stock must be clean and free from card fly. If the mill is running colored stock on near-by cards, it would be profitable to place a screen between the cards running the white and colored stock.

By spinning the yarn at half draft, the batch will run well in spinning with few or no ends down. Because the blankets are napped on both sides, the yarn should not be twisted too hard, but it must have sufficient strength to meet specifications.

Finishing—In fulling, do not allow the width to come in faster than the length. After fulling, transfer to goods washer and run until they are free from oil etc.; change water and add soap, and run at about 100°F. until the goods are thoroughly clean.

The goods should be napped previous to drying and the nap should be raised slowly, starting light and working into the cloth gradually, so as to secure an even nap on both sides of the blanket. Next, dry the piece to 74 to 74½ in. and again run over napper until the desired nap or cover is obtained to match the standard. Let pieces stand on the roll overnight, before going to finished blanket perch for inspection.

The accompanying layouts and drafts are suggested as further guides.

Layouts for Navy Wool Blankets

Type A

74 x 84 in.; 4 lb. 6 oz.
2450 ends
6¾ x 4; 90½ in.
32 picks at loom.
Warp and filling, 9 cut, 129.6 grains

Warp	14.51 oz.
Plus 10%	1.45 oz.
	15.96 oz.
Filling	17.10 oz.
	33.06 oz.
	33.06 oz. Perch
Loss 16%	5.29 oz.
	27.77 oz.

Shrinkage 8%; Finish 30 oz. pet yard or 4 lb. 6 oz. per blanket.
Full to 72/72½ in. width
Filling pattern,

A. White—208	2253	208—2668	
B. Blue—	106	106	— 212
			2880

—90 in. at loom.
88 in. at perch

Type B

66 x 84 in.; 4 lb.
2268 ends
7 x 4; 81.6 in.
32 picks at loom
Wrap and Filling, 8⅔ cut, 134.6 grains

Warp	13.85 oz.
Plus 10%	1.38 oz.
	15.23 oz.
Filling	16.06 oz.
	31.29 oz.
	31.29 oz. Perch
Loss 16%	5.07 oz.
	26.22 oz.

Shrinkage 6%; Finish 27.45 oz. per yard or 4 lb. per blanket.
Full to 66/66½ in. width
Filling pattern as Type A blanket.

Type C

66 x 90 in.; 4 lb. 4 oz.
Shrinkage 5½%; Finish 27.2 oz. per yard or 4 lb. 4 oz. per blanket.
Full to 66/66½ in. width
Filling pattern

A. White— 208	2572	208—2988	
B. Blue	106	106	— 212
			3200

100 in. at loom
98 in. at perch

Note: Types B and C use same layout, and could be woven from same warp; however, pattern chains are different, also size of blankets.

Type D

60 x 84 in.; 3 lb. 12 oz.
2400 ends.
7¾ x 4; 77.4 in.
42 picks at loom.
Warp and filling; 11⅓ cut, 103 grains

Warp	11.3 oz.
Plus 10%	1.1 oz.
	12.4 oz.
Filling	15.3 oz.
	27.7 oz. Perch
Loss 16%	4.43 oz.
	23.27 oz.

Shrinkage 9%; Finish 25.7 oz. per yard or 3 lb. 12 oz. per blanket.
Full to 60/60½ in. width.
Filling pattern—solid white.

How to Reduce Loom Stoppages

New method of production control will help to improve weave-room efficiency

By ALFRED R. KANDLER

THE SHORTAGE OF MANPOWER will be felt increasingly by textile mills as the war continues. This makes it necessary to do everything possible to obtain the highest efficiency in production. In weaving mills, one step in this direction can be accomplished by improving present methods of production control. Described below is a new idea in production control. Employed in addition to the present system, it will give an accurate picture of actual operating conditions and point the way to higher weave-room efficiency.

Production control in weaving mills generally is carried out with the help of the pick counters. The pick counter indicates the number of revolutions made by the loom. This figure is the same as the number of picks and therefore equals the production. The theoretically possible output of a loom during 1 hr. is calculated by multiplying the loom r.p.m. by 60. A deduction of 20% is usually made for standstills of all kinds, so that the weaver is supposed to reach 80% of this figure.

As a rule, weavers' wages are calculated on the basis of production as indicated by the pick counters. Frequently production is controlled only by looking over the pay sheets and questioning any weavers whose weekly wages have been below average for some time. In the event a weaver answers that the warps are not running well or his looms are not in good condition, a clerk makes a record of all standstills of these looms for some hours in order to disclose possible defects.

The pick counters are read every week-end, and weekly production is calculated. It frequently happens that a weaver obtains a satisfactory total production, although some of his looms gave an unsatisfactory production, the low production of these looms being compensated by the good results of the others. These looms easily can be detected by looking over the weekly production list, but it is necessary to check to find out whether or not the looms stood idle for unduly long periods waiting for new warps or repairs.

However, the information obtained by this method has the disadvantage of being based on figures which may be considerably influenced by the weaver's subjective conduct. Whenever a loom does not run satisfactorily, the weaver will pay more attention to the other looms which are recompensing him better. For instance, the weaver will give preference to looms with good-running warps, thus slighting the other looms which give more trouble.

This is especially true when there are different styles on the looms. Also, the distance to be covered by the weaver may be of some consequence, so that the looms at the end of the working area may be neglected. Whenever such reasons appear, they will result in a production smaller than necessary for some looms. Therefore, the results obtained by the method of production control outlined above do not seem to be adequate.

A WEAVER'S WORK consists almost exclusively of "getting the looms started." In consequence, each standstill—whether necessary or unnecessary—means work for the weaver. Since several looms are generally stopped at the same time, the major part of the lost time for a particular loom is that occurring until the weaver can get around to that loom. One way to increase weave-room efficiency is to eliminate avoidable standstills.

The three top mechanisms of the loom—filling stop motion, warp stop motion, and protector motion—are more or less sensitive, and in the course of time may get out of adjustment. If this occurs, the loom either will stop without any reason or it will not stop at all. The latter occurrence may have disagreeable results, but usually the defect will be discovered at its first appearance. Not so the stopping without reason. Stopping of the loom without reason is not serious if it happens infrequently. Likewise, if the loom stops frequently, the weaver will notice it and inform the loomfixer. It is serious, however, when the loom stops one to three times an hour. Most weavers will not notice that anything is wrong with a particular loom if it stops only two or three times an hour, and this loom in consequence will keep the weaver busy for days. Furthermore, the time from stopping to restarting always represents lost production.

There are also avoidable standstills originating in defects of other parts of the loom; for instance, the filling may be caught on a part of the filling motion, it may be cut by the cutter, it may be caught in the shuttle, it may become pinched in the box, etc. All these defects result in considerable lost production as long as the weaver does not perceive that they are occurring at frequent intervals.

A method for detecting too-frequent loom stoppages involves the determination of the "running number" of the loom. The running number is the number of revolutions or picks a loom makes from one start to the next stop. The sum of all running numbers during a given working period equals the num-

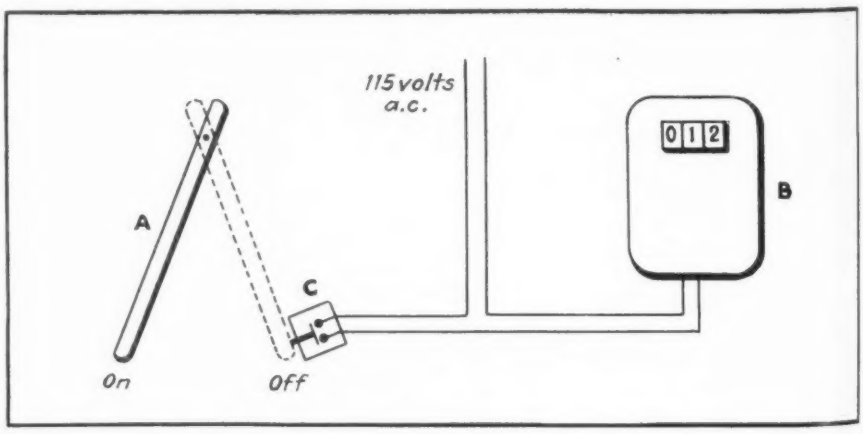


Fig. 1. Device for counting loom standstills; *A*, shipper handle of loom; *B*, counter with time-delay relay; *C*, auxiliary contact for operating counter.

Shift:..... Loom No.: .....

Pattern No.: .....

Weaver:..... Running Number: .....

Date	Pick Counter	Stoppages		Remarks	Loom-fixer
		Counter	Daily		
Week				Running Number:	
Week				Running Number:	

Fig. 2. Form for recording readings of pick counter and loom standstill counter.

ber of picks indicated by the pick counter.

The "average running number" is obtained by dividing the number of picks by the number of all standstills during the same period. This average running number represents a value useful for production control. The number of picks already being known, it is necessary to count the number of standstills for the calculation of the average running number.

COUNTING OF STANDSTILLS can be done by a counter operated mechanically or electrically by the starter handle of the loom. Care has to be taken that only real standstills are registered and not every switch on and off movement while the weaver works on the loom. Therefore, it is necessary to install a time-delay relay which allows the counter again to be operated only after about 20 revolutions.

A schematic sketch of an electrically operated counter is given in Fig. 1. The shipper handle of the loom is shown at *A*; the counter with time-delay relay at *B*; and an auxiliary contact for operating the counting device at *C*. The device is relatively simple and inexpensive. It is possible also to make portable counters which can be employed for periodical check-ups of looms or for special investigations.

The following example demonstrates the kind of information revealed by the average running number. Assume a weaver is running 30 looms all weaving the same kind of cloth; each loom makes 160 r.p.m.; records of revolutions, standstills, and average running numbers are kept. Such a record for seven looms is as follows:

Loom	*Rev.*	*St'stills*	*Av. Run. No.*
1	70,000	10	7,000
2	60,000	10	6,000
3	60,000	40	1,500
4	50,000	10	5,000
5	50,000	50	1,000
6	40,000	10	4,000
7	40,000	50	800

Without knowing the reasons for the standstills and following the results of the pick counters, one would consider that production of looms 1 to 3 was satisfactory, and production of the looms 4 to 7 was unsatisfactory. However, the average running number discloses that production of the looms 1, 2, 4, and 6 was satisfactory; and that of 3, 5, and 7 was unsatisfactory. This can be seen without knowing the reasons for the standstills. It is obvious the looms 2 and 3, 4 and 5, 6 and 7 require a quite different amount of work, although each pair gave the same production. Looms 2, 4, and 6 apparently had longer standstills, but were running satisfactorily for the rest of the time. Loom 3 gave a fair production, but had too many stops. The result suggests a check-up of looms 3, 5, and 7, because they are stopping too often.

Since it would take too much time to figure out all the running numbers, the calculations are confined to looms with small production or with a large number of standstills. The size of the running number depends upon the cloth being woven. A cloth permitting a weaver to run 30 looms has a much higher running number than another one allowing only 6 looms. The running number for different types of fabrics and looms has to be determined by experience. It is advisable then to issue a printed form for each loom on which the weaver at the end of each shift enters the reading of the pick counter and standstills counter.

Such a form is shown in Fig. 2. This helps to avoid mistakes which would occur if anyone forgot to switch the counters from one shift to the next one; also, it enables the loomfixer to note the time and reason for long standstills. More important, however, is the possibility of checking the loom at any time. The weaver, the loomfixer, or the overseer can compare the reading of the counters to check the counter of standstills in order to find out how the loom is running. Thus, it is possible to detect too-frequent standstills at once, without waiting until the following week, when the office figures out the results and the causes possibly have been removed.

THE NUMBER OF STOPS handled by the weaver gives a better idea of the work actually done than does the number of picks or the production expressed in percentage. It is a fact that the better the looms run, the less work the weaver has. A large number of standstills may indicate that a weaver has done his work satisfactorily, although his looms have given unsatisfactory production. Of course, the standstills may last from less than a minute to several hours, but a certain averaging up may be assumed considering all of a weaver's looms during the course of one or several weeks. Furthermore, the loomfixer's efficiency can also be checked by comparing the average running numbers or only the number of stoppages occurring in the groups of several loomfixers. Naturally, this is possible only with the same type of looms and the same kind of cloth. Finally, the counting of standstills can be of some help when trying out new styles or new materials. Even if this does not indicate what percentage of the total standstills is due to the material, it does make it possible to get an idea by comparison with the number of standstills which have occurred ordinarily with the loom on which the new material is being woven.

Vat Dyeing of Civilian Fabrics

Conservation Order M-103 necessitated development of new color combinations

By C. NORRIS RABOLD
Union Bleachery, Greenville, S. C.

CONSERVATION ORDER M-103, restricting the use of certain anthraquinone dyes, gave rise to several problems which have taxed the ingenuity of dyers. Although these problems are not yet completely solved, many plants have succeeded in overcoming some of the worst difficulties. Below are outlined briefly the provisions of the order, its first effects on production of commercial shades, and the way in which the dyers have worked out satisfactorily combinations of dyes for application to fabrics for civilian use.

As first issued by WPB on March 28, 1942, Dyestuffs Conservation Order M-103 prohibited ten anthraquinone dyestuffs from being used on any other than Government fabrics for the period of April 1 to June 30, and restricted the use of all anthraquinone vat dyes for commercial purposes to 12.5% of the amount of such dyes delivered during the period of Jan. 1, 1941 to Dec. 31, 1941. Since its issuance, the order has been amended quarterly. The most recent of these amendments has transferred one color, Golden Orange R (C.I. 1097) from the restricted list, or List A, to the List B group of vats that can be used for commercial work. [A still more recent amendment restricts sale in any calendar quarter of 1943 of all organic dyes and pigments for civilian use to 15% of deliveries for 1941—Editor.]

Vat dyes now on List A and restricted for Government use only are: Brown R (C.I. 1151), Brown G (C.I. 1152), Olive R (C.I. 1150), (Khaki 2G) (Olive T) (Olive GGL) (Olive Green B) (Yellow 3Rd). The restriction of List A dyes for Government use does not mean that these are the only colors that can be used on Government fabrics, as there are a number of the anthraquinone vats on List B that are used in sizable quantities on Government orders.

FIRST EFFECT of this order was to bring about a grave disturbance in the dye combinations ordinarily employed for producing commercial shades. A good many plants temporarily were at a loss as to how they could produce their commercial shades in which List A colors formerly had been part of the combination. Even though satisfactory combinations could be worked out using only the List B colors, due to the tremendous pressure on the dye manufacturers for production of vat colors on List A, many List B colors were not then available.

Then too, some plants at the time the order was issued had already scheduled a large quantity of commercial work which would require more than the amount of color allotted to them on the 12.5% basis of the original order. This necessitated a search for vat colors of satisfactory fastness other than those on List B—a difficult undertaking, as there are few other vat types comparable in fastness to the anthraquinone derivatives.

Several unrestricted colors were tried by some plants, but it was found that practically all of them had some weakness. For example, a brown which was available possessed excellent fastness, practically equal to the restricted anthraquinone browns, but it changed in shade so badly under different light sources, being quite yellow under natural daylight and very red under artificial light, that it was difficult to match standards for shade. Another substitute brown dyed well, but unfortunately had no chlorine fastness and also changed noticeably in shade on soaping.

For several months after Conservation Order M-103 went into effect there was considerable confusion and uncertainty among the converters and the finishing plants as to what shades could be produced and with what types of colors. In certain instances some customer's lines were switched from vat colors to sulphurs; and in other instances certain shades in a line—particularly tans and olive drabs—were changed to sulphurs. This, of course, created a merchandising problem for the converter who had been offering a line of shades in vats and then had to change certain shades to sulphurs with a corresponding decrease in fastness. Therefore, considerable pressure was placed upon the dyeing plants to try to make any kind of a shade in vat colors, even though it did not match the customer's standard so that the line might be held intact.

For some three or four months there was a great deal of work done in every plant to rematch their shades without using the restricted colors. During this time, while the plants were working out new dye combinations, there were lots of goods dyed which were not good matches to standard. The converters, almost 100%, accepted this condition with the best of grace, as they fully understood the difficulty dyehouses were having in rematching their shades.

Everybody felt—both the production end and the converting and selling end—that the Government rightly should have the dyes of the highest fastness for uniforms and equipment. The spirit of cooperation that prevailed and still prevails between the manufacturer and the converter is excellent.

A DEFINITE SHORTAGE of vat colors existed, both of the List A and List B types, from December, 1941, until around May or June, 1942. But in the summer, due to the effect of Conservation Order M-103 and the increased production of the dye companies, this condition was remedied. At present there seems to be a reasonable quantity of all anthraquinone vats available, and it is possible to obtain all List B colors.

Included in the List A colors are four olives, two browns, and a khaki which might be classified as a green brown. The olives took in with one exception all types of vat olives being made. Since this exception is used almost 100% on Government work, it is safe to say that there are no vat olives left for civilian shades. The browns took in without exception all the so-called yellow-brown types, leaving only the red anthraquinone browns available for commercial work. The khaki included all the manufactured types of khaki.

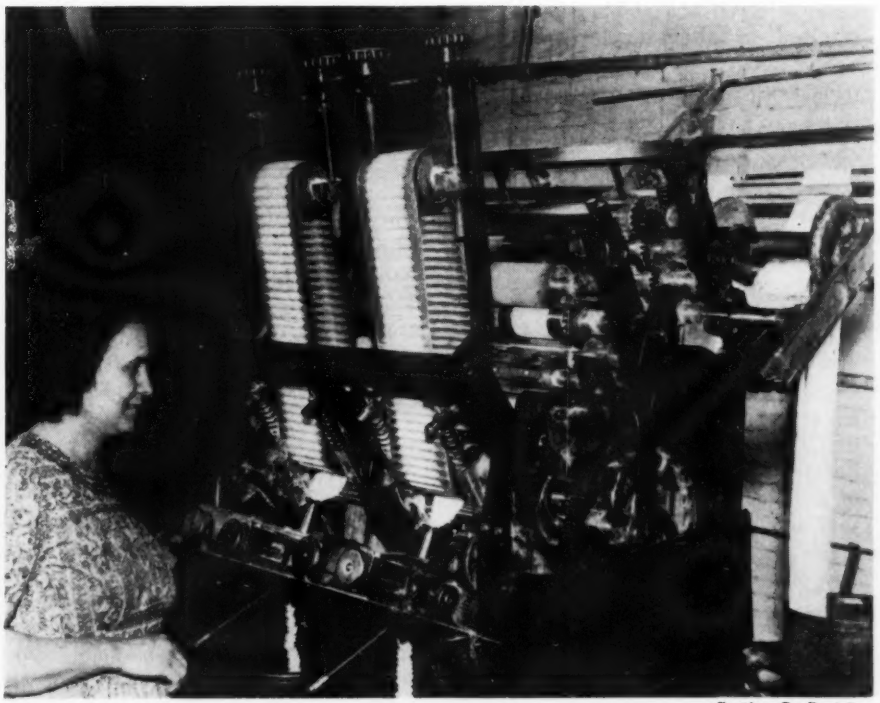
The restriction hit, first of all, all shades of commercial tans and khakis, dark forest greens, and olive drabs in various casts and depths. Also affected were such shades as grays, stone blues, gray greens, so-called misty-blues, and other shades of this type. The shades not particularly affected included maize, golds, copenhagens, bright greens, royals, navies, and heavy browns; even here, particularly in the gold and maize shades, many plants had to change their

(*Continued on page* 110)

Tow-to-Top Processes for Rayon

Short-cut methods for producing spun yarns eliminate carding and combing

In traditional methods of manufacturing spun rayon yarns, staple fibers produced by cutting continuous filaments into desired lengths are passed through cards and combs to bring the fibers back to their original parallel arrangement. Destruction of the original orderly arrangement of the fibers and subsequent carding and combing to restore the parallelism have seemed to many textile men to be inefficient and unnecessary procedures. Accordingly, several individuals and groups have endeavored to develop short-cut methods for making yarns having the characteristics of spun rayon. These methods involve the breaking or cutting of continuous filaments of rayon in form of tow into staple fiber lengths and converting them into tops without destroying the original parallel alignment of the fibers. The following review of some of the progress to date in development of tow-to-top conversion methods is abstracted from a report released by E. I. du Pont de Nemours & Co., Inc.



Courtesy Du Pont Co.

Perlock tow-to-top machine. Two bands of rayon tow are fed from cans to breaker rolls which break the continuous filaments and then enter stuffing boxes which impart a crimp. The crimped sliver then falls into cans.

TOW-TO-TOP PROCESSES for conversion of continuous filaments into spun yarn without carding and combing represent a revolutionary step. Several inventors have been working independently on the problem, and have come forth with different methods of achieving the same result. All start with rayon tow, an untwisted rope made up of several thousand continuous filaments of viscose type rayon.

Among those who have worked on the development of tow-to-top processes are J. L. Lohrke and H. H. Perry, Philadelphia worsted and rayon top dealers; N. S. Campbell, of Greenwich, Conn.; and a group at Pacific Mills. Technical and sales development men of the Du Pont Rayon Division at the same time devoted themselves to improving the rayon tow itself and helping fit it to new processes.

Lohrke and Perry conceived the idea of breaking the tow between sets of rollers traveling at different speeds, in very much the same way that a sliver is drafted in ordinary textile procedures. In fact, one of their first machines was simply a standard worsted roving frame, rebuilt according to their own design. The tow enters the machine through rolls designed to spread and flatten it out and permit more uniform gripping by the breaking rolls. The first pair of breaking rolls grips the tow firmly, while the second pair, revolving at a higher speed than the first, pulls the tow and causes the individual fibers to break. The second pair of rolls is fluted, and a leather apron lies over the bottom member of the pair. Mounted between the two pairs of breaking rolls are two rolls with sharp flutings, which assist in the breaking and tend to produce fibers of even length. The tendency is for the fibers to break in staggered arrangement, due to a combination of factors, some of which are not yet fully understood.

Lohrke and Perry applied Feb. 18, 1930, for a patent on the method (which they termed the "Perlock Process") and were granted the patent Oct. 18, 1932. At first the Perlock process was slow in catching on commercially, but during the last year a combination of circumstances has given tow-to-top conversion a decided boost. There has been an increased demand for rayon yarns due to the war program. Cards and combs have been operating to capacity and additional machines have been difficult and in most cases impossible to obtain. Many progressive textile men have therefore turned an interested eye to this method, in the application of which Leslie Garth, of Garth Mfg. Co., Passaic, N. J., has played an important part.

The Campbell Process, which is covered by various patents in the United States and other countries, has been under development for more than ten years. The inventor states: "Since the spinning of yarns is based on 'drawing,' the process starts at that point and consists of patented attachments applied to some standard drawing apparatus, preferably an interesting gill box. There are attachments at both ends of the drawing apparatus. The cutter feeds directly into the drawing or gill box. Its main feature is a 'double helical shear.' This, with the necessary feed rolls, forms the cutting machine

which cuts diagonally and feeds the tow distributed in a band of fibers as wide and thick as the gill box will handle successfully—which is the limit of production for each 'head.' On the delivery end of the gill box, the attachments consist of a condenser or 'dynamic funnel' and a 'controller' which puts false twist into the condensed web. This controller is a mechanism which positively holds and feeds the sliver at uniform speed and at the same time is revolved in alternating directions to apply false twist. The sliver is then packaged, to be ready for the next stage of drawing."

Pacific Mills, Worsted Division, has developed a method of tow-to-top cutting, the details of which have not as yet been announced, although it has produced several hundred thousand pounds of tow-top on a commercial scale. This company maintains that its variable rayon tow-top when blended with the natural variable wool top produces a better blend and quicker intermingling of the two different fibers; that the variable-cut yet longer rayon fibers of the top assist in the processing of the shorter of the wool fibers; and that the variable length adapts itself much more readily to the Bradford system of worsted drawing and spinning.

SEVERAL ADVANTAGES are cited for tops produced by the methods mentioned above. None of the tow-to-top operations, for example, subjects the fibers to the wear and tear that they suffer when going through the carding and combing machines. The result should be a somewhat stronger yarn. Nor is there so much waste fiber as in the ordinary parallelization operations.

Most obvious gain is in the cost. In a typical set-up of three cards and four Noble combs, an investment of approximately $50,000 is represented. In addition, reclothing of the cards and repair of the comb teeth constitute an appreciable upkeep item. Cost of tow-to-top equipment needed to produce the same amount of top is approximately $10,000. Further, there is no wire clothing or teeth to wear out. On a production basis it is estimated that there is a substantial saving in the cost of producing top from rayon tow as compared to the conventional method of producing a top from staple fiber.

A reduction of steps is also realized in bringing the top or tow sliver down to a yarn. It may be possible, for example, to reduce the doublings from the several thousand seen in some worsted operations to a few hundred, or less than a hundred, depending on the type of yarn desired.

Uses for rayon top produced by these simplified methods range from ribbons to carpets and include fine handkerchiefs and blends with wool for women's clothing and men's suitings. Du Pont's Fiber-D rayon tow which contains an inherent crimp is being converted to top by the same operations and sent on to the manufacturer of carpet yarn.

One would be bold, at this stage, to predict in any detail the future course of this new textile process or its influence in the fabric field. But the advantages outlined above, applied to the increasingly strong rayon yarns which are almost certain to emerge in a few years, should bring about the production of inexpensive spun-rayon fabrics of long, fine staple. Nor need the tow-to-top process be confined to rayon. It may be used in Nylon, or some of the animal or vegetable protein fibers.

Vat Dyeing of Civilian Fabrics

(*Continued from page* 108)

combinations, as the oranges they were using were restricted. Also, in some of the other shades, particularly the heavy browns or beaver shades, List A colors had been part of the combinations. However, in general, there was less trouble in rematching this group of shades with satisfactorily running combinations than it was for the group previously mentioned.

TWO DETAILS are most desirable in setting up a dye combination. The first is to select dyes which are themselves as close as possible in shade to the shade to be matched. The second is to select dyes of as nearly the same dyeing properties as can be had. This means that the colors in the combination should dye at approximately the same temperatue; their rates of exhaustion should be as nearly the same as possible; one should not "wash-off" appreciably more than the other; and their rates of oxidation should be as nearly the same as can be obtained.

Take, for example, that group of shades classified as gray-greens. Olives are commonly employed in making these shades. Now that there are no olives, most dyers will use a black or a gray. However, this entails the use of a dye with an exhaustion rate different from that of the other colors in the combination. Again, olives were commonly employed for flattening and greening stone-blue shades. Now the dyer finds it necessary to use blacks or greens, or the two together, as shading colors. He may be also forced to change his base color, a blue, from one type to another, winding up with a new combination.

To make such shades as forest greens and olive drabs, it was former practice to employ greens and olives, yellows, and oranges, with the yellow-browns for shading when such a cast was desired. Khaki, olives, and yellow-browns also are often used together for making these shades. What does the dyer now have to work with when making such shades for the commercial trade? He still has his greens, but his browns and olives have vanished. It is possible to make a forest green or an olive drab, with green as the base color; flattening with black, blue, or violet; and throwing the cast of the shade with a yellow, orange, or red-brown. However, when these colors are used together, it is almost impossible not to violate the two rules for combining colors in a formula.

PRODUCTION OF TAN AND KHAKI shades is particularly troublesome, as the majority of these shades are on the yellow side. The restricted browns and olives, together with a third shading color if necessary, make the best combinations, as the restricted browns are all of the yellow type. The dyer has available from List B the red-browns, yellows, oranges, and blacks from which to make his tans. Theoretically, it is possible to make a tan by using a yellow or orange, green, and a violet or blue; but this means disregarding the two rules for making a combination. First, it calls for use of dyes which are nowhere near the end shade; and, second, it necessitates use of colors which do not possess anything like the same dyeing properties. It is possible also to make a tan by using a yellow, a red-brown, and a black.

The dyer, in trying to rematch his shade standards without the aid of olives and browns, suffered many a headache, but these headaches are not nearly so painful today as they were six months ago. Experiments and experience have shown which of the List B colors will make the best combinations for various shades. Definitely, combinations made entirely with List B colors do not run as well as did the old combinations where the List A colors could be used. However, it is now possible to produce any vat shade, regardless of cast or depth, using List B colors only, with the assurance that the lots so dyed will match the shade standard within a reasonable limit of tolerance. Also, the consumer can be assured that there will be no let-down in the high standards of fastness to which he has previously been accustomed.

Let's Talk About Our Twisters

And the many different ways in which we can reduce waste of time and money too

By W. F. CROWDER
Trenton Cotton Mills, Gastonia, N. C.

WE READ A LOT TODAY about weaveroom economy, production, and costs. How to train loomfixers. How to increase loom efficiency. That's fine. In all weaving mills everybody gets paid out of the weave room. But why is the weave room any more important than the carding and spinning or twisting? If the stock hasn't been properly processed before going to the weave room, who can weave it?

Consider the twister room. It costs money to twist yarn, but some constructions of goods call for ply yarn, so we must have twister rooms. The folding and twisting of standard yarns is a simple process. The twist per inch to be put in the yarn is the chief factor to consider, since it limits production. However, there are other points of interest for discussion in the twister room, as in any other department in the mill, such as production, waste, etc. Since the twist per inch in the yarn is usually specified by the customer, the production of a twister is more or less fixed from the same source, whether it is 15 turns or 30 turns. Naturally one would expect less production from a machine on 30 turns than from one on 15 turns; and after we know what twist we have to use, then it is up to the overseer to see that his cylinder and spindle speeds are up to par, and that a minimum of time is lost in creeling, cleaning, and doffing.

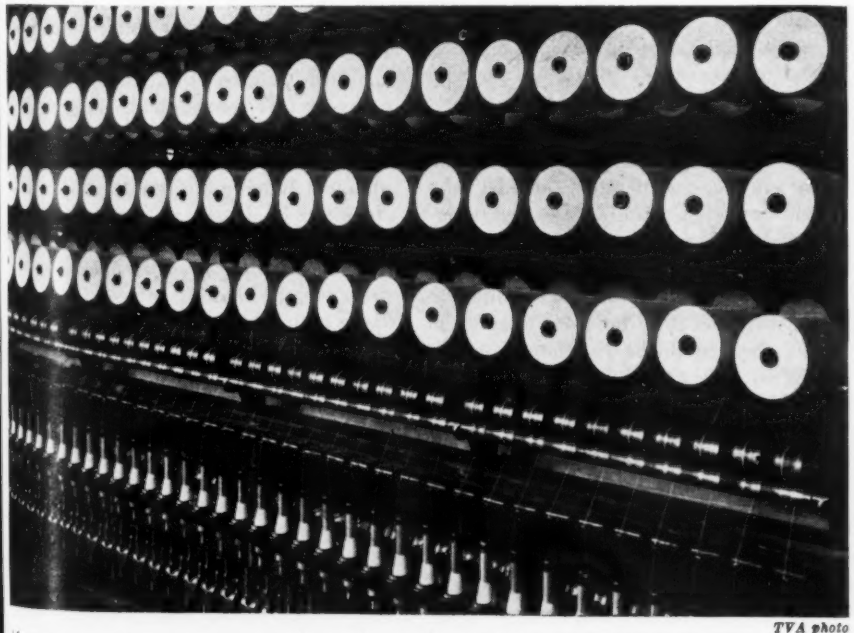
Waste is a word no mill man or Government official likes to hear—now of all times in our history. Now is the time when we just can't afford to waste anything. And waste made in the twister room is costly, since you are making waste out of completed yarn. That's why, when the manager or super goes through the twister room, he always has time to stop and set back a roller where an end is down. The cause of most waste in the twister room is oil or grease. Faulty builders on the frames, slack tapes, bad rings, lifter rods sticking, tangled spools, and many other factors add to waste. The best solution to the waste problem is properly trained help (which is very scarce now). If the help is properly trained, there will be a minimum of waste made and little bad work passed on to the next department. Money spent in twister rooms for repairs is well spent. Keep the machines in good mechanical condition, and the savings in waste alone will pay the bill.

One system that has been used effectively to reduce waste in twister rooms is to have a waste board in a conspicuous place and post a record of the weight of waste each twister tender makes on each shift to make the operatives waste conscious. Each man should try to run his job and make less waste than the other fellow.

THE WASTE OF YARN is not the only waste in twister rooms. How much oil do you waste each time you oil spindles? In most instances, twice the amount required to fill the bases is used. If the base is run over, about as much oil is wasted as is put into the base. There is no point in oiling the outside case and rails. Here is where trained help is essential again. Then there are the cylinder bearings and other bearings where oil is wasted. It is a common sight to find worn bearings that oil will not stay in; you put enough oil in it to last three days, and in half an hour it has all run out on the floor. All this costs the company money. Besides there is always room to save on ring, grease, travelers, brooms, brushes, and tapes.

Some men put cleaning before production and lose 30 minutes time on every doff cleaning the frame. Good!—if you can afford it. But after all the company gets paid for the pounds of yarn sold and not for having spotless machinery. There are extremes both ways. Some clean too much, some not enough, but if the cleaning isn't properly planned, the mill can lose lots of pounds.

We hear that there is no use trying now to get any improvements in equipment, due to the war. But the war will not last forever. And we can still have visions and new ideas. I don't know of a machine in the mill that has more room for improvement than the twister. Why not streamline the twister? Why not higher spindle speeds? Why not eliminate the old-fashioned water trough, the drag rods, the ring grease, and other features that are the same today that they were 25 years ago? Let's also try at all times to improve on the way we do our own jobs.



TVA photo

Keep your twisters in good mechanical condition, and the savings in waste alone will pay the bill.

It Starts in the Boiler House

First step in conserving fuel is to put and keep equipment in tip-top condition

By FRED D. MOSHER

CONSERVATION OF FUEL is a necessity which will remain with us for the duration. Any effort to reduce fuel consumption in textile mills should start in the boiler plant. High steam production costs and fuel consumption in the boiler room will nullify efficient use of the steam in power generation, heating, and processing.

To reduce fuel consumption, two conditions must be sought. First, units must be so maintained that all outages are scheduled and not forced, and the availability kept at the highest possible figure for the load and operating conditions prevailing. Second, fuel must be burned efficiently and steam-generating equipment operated in such a manner that high performance standards are maintained under all conditions of load.

Refractory is often the chief expense item on the maintenance list. Three causes for high refractory maintenance are misapplication of refractory for the temperatures carried and the fuel handled, inefficient operation with respect to burning the fuel, and poor cleaning procedure which permits clinker to build up to the point where considerable damage is done to brickwork during removal. To preserve refractory, it is important that temperatures in the furnace be kept well below the point where spalling of the refractory or fusing takes place.

SLAG AND ASH, if not cleaned from the furnace surfaces—whether they be water-cooled or refractory—will extend into screens, tube banks, and superheater surfaces. With water-cooled walls, the immediate effect is a reduction in heat absorption, which raises the furnace temperature further; when the temperature reaches the point at which ash particles are kept in molten form, the particles will travel in the gas path to a cooler region and deposit on superheater surfaces. The process is cumulative and may continue to the point where—due to excessive exit gas temperatures, draft reduction, or actual failure of refractory or fuel-burning equipment—it becomes necessary to shut down the unit for expensive repairs. The importance of regular deslagging and cleaning of furnace walls and all heat-absorbing surfaces cannot be stressed too much.

Once surfaces begin to foul, it becomes a struggle between efforts at removal and a situation that gets worse as time goes on.

Apart from the damage which may be caused to boiler refractories when surfaces are permitted to get dirty, fuel waste is increased. In stoker-fired boilers, the effect of high furnace temperatures is to increase the loss of combustible fuel to the ash. Molten ash forming on the grates becomes a carrier for particles of green fuel supplied by the stoker. Where superheaters are used, reduction of steam temperature is a source of fuel waste; and this reduction in the steam temperature must occur when the effective heat-absorbing surface of the superheater is reduced by fouling with ash. Stack temperatures increase rapidly when surfaces become dirty, and efficient boiler operation requires just the opposite of this condition. In stokered units, a further adverse effect is caused if air heaters are used; the preheated air temperature will get abnormally high, due to the increase in the temperature of the stack gas, and this in turn will burn grates, tuyeres, and other parts of the stoker which are exposed to the high heat.

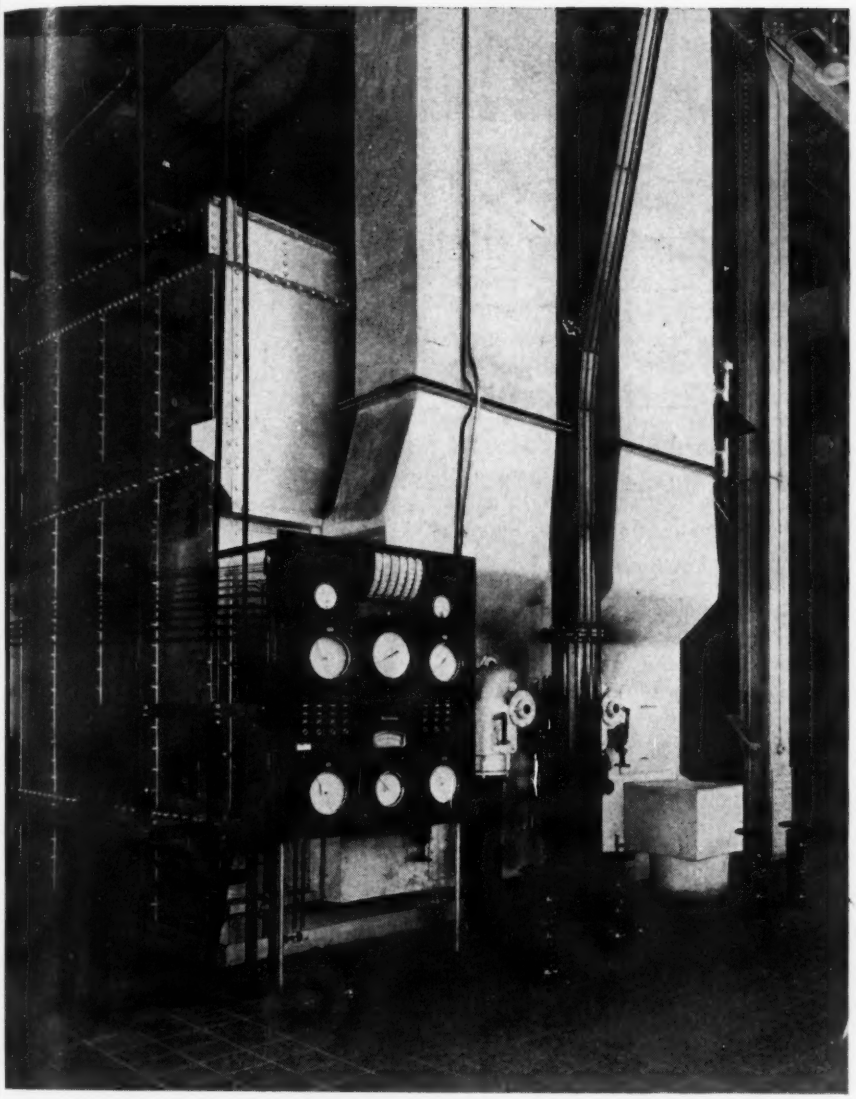
Soot blowers are generally accepted as required parts of boiler installations. When properly located and installed, sufficient in number to provide adequate coverage, applied to meet operating conditions, and operated properly, soot blowers will maintain clean surfaces. When soot blowers are found to be poorly located for the job to be done, they should be re-located as indicated by ash and slag accumulations; fixed units may have to be supplemented by the installation of retractable blowers. Too often, soot-blowing elements are not further supplemented by hand lancing, which often is the means of keeping a unit on the line. New load conditions or a change of fuel may introduce new cleaning problems. It may be necessary to increase the blowing pressure of soot-blower elements. Additional clean-out doors may be necessary to permit supplementary cleaning by use of hand lances.

CLEANING OF BOILER INTERNAL SURFACES is a subject that has been literally kicked around by boiler operators. One school of thought contends that only elbow grease will keep a boiler clean; the opposite view is that very little elbow grease is required if feed-water is conditioned properly. The latter view is gaining prominence because of the mounting evidence that feed-water treating is a problem which, when handled by skilled technicians, can be solved to the betterment of operating conditions and profitable results.

It is necessary to treat most feed-waters to prevent corrosion and deposits of scale. During the last ten years the trend in boilers has been to high pressures, and many textile mill installations have been of this design. It is noteworthy that every new installation included provisions for feed-water conditioning. A typical installation includes deaerators, softeners, and supplementary chemical treatment. In no instance should chemical treatment be expected to remove deposits, since this is not its purpose. Besides chemical treatment, it is necessary to regulate blow-down to keep concentration within the boiler at required amounts.

Feed-water conditioning so far has not been able to eliminate entirely the necessity for mechanical cleaning. In time deposits build up, and this must be kept in mind when outages are planned. When a boiler is shut down for cleaning, it should be kept filled with water and cooled to ordinary temperature before the water is drained; this prevents the baking of scale due to high temperature of the setting. In many plants, chemical cleaning to remove internal deposits is replacing older, mechanical cleaning methods. In chemical cleaning, acids are used to dissolve scale. The acids are inhibited to prevent attack on the metal, and the cleaning solution is circulated through the generating unit for a specified time.

THE CHIEF SOURCE OF FUEL WASTE in steam boilers is excess air. This loss can never be eliminated, but it can



Something to shoot at! Are your boilers maintained in equally good condition?

be controlled and kept at a minimum. In the maintenance of boilers, much can be done to reduce this loss by keeping settings tight. The bad effects of leaky settings are many. Setting air leakage cools the combustion gases, raises stack temperatures, and robs the boiler of essential draft; in order to compensate for draft losses caused by the air leakage, fans must work harder and consequently use more power.

In older settings, the losses incurred through air leakage may be excessive. An important part of any maintenance program should be the regular checking for and correction of setting air leakage. Tests are made either by going over the suspected parts of the setting with a torch, or the building of a smoking fire with a slight positive draft. The methods of correction depend on the size of the leak. Where refractory has broken loose, it should be repaired by brickwork or standard plastic refractory. Small cracks may be repaired by cementing with stove putty or furnace cement; larger cracks should be closed with asbestos rope soaked in fireclay, surfaced with furnace cement to seal.

The problem of periodic inspections may be a knotty one in plants where production schedules require heavy steam loads over extended periods. However, the benefits of regular inspections of units must be weighed against other factors. Since the objective of plant maintenance is to keep equipment in first-class condition, it is obvious that the condition must be examined with regularity. Most States require a yearly shutdown for inspections required by law, but it is good practice to plant an outage for each unit at least every six months.

Operators are not always aware of the essentials for the efficient combustion of fuel. Fuel must be burned with a sustained temperature of sufficient intensity to promote steady burning. There must be adequate mixing of the fuel with combustion air, from which it follows that air must be supplied in excess at all times. Burning takes time, and it is necessary for burning to take place in space which allows for complete burning of the fuel, so that there is a minimum loss of combustible matter.

In most modern steam generators, air preheaters are provided to heat the combustion air in advance so that efficiency is obtained in the furnace, and heat which would otherwise be wasted, is put to a useful purpose. In burning pulverized fuel the factors of full air supply, fineness of the fuel, and moisture content are important elements in the problem of mixing. Air supply, when improperly controlled, may introduce many difficulties. For many fuels, in order to maintain temperature for slagging purposes, the air must be closely regulated, so that enough is supplied for burning and at the same time little enough to prevent chilling of fluid slag. Closely related to air control is gas analysis. Gas analyses must be interpreted in the light smoking produced, lack of or existence of CO_2 in the exit gases, and air leakage through the setting. None of these should be present for good performance.

Frequent checks ought to be made on fuel fineness as it is produced by coal pulverizers. Regardless of how well other factors are controlled, poor mixing and burning will result from coarse fuel. Moisture, besides promoting heat loss, will affect coal distribution from the burners; therefore adequate drying and moisture removal by tempering the air supply are essential.

UNDER WARTIME LOADS, and the tending of boilers by operators insufficiently skilled in burning pulverized fuel, the hazard of furnace explosions may be increased. Furnace explosions will not take place if the air-fuel ratio is correctly maintained; lighting torches should burn with a full flame so that lighting is not delayed when starting or re-lighting. When flame failure occurs, all unburned fuel should be purged from the furnace before relighting is attempted; the air supplied must never be in velocity enough to blow out the fire at the burners.

Analyses should be made periodically on fuel, gas, and water. Properly interpreted, the results of these analyses serve as guides to better operation.

Full advantage should be taken of control devices, metering instruments, and recorders. When used properly in conjunction with adequate records, these aids offer many possibilities for cost reduction and fuel saving.

Portioning Hosiery Yarns

A few simple rules which will prevent a lot of grief in full-fashioned mills

By K. R. BARKER

PORTIONING OF THE YARN to the leggers and footers is one of the most important problems with which knitters of rayon full-fashioned hosiery must cope. The problem is particularly difficult today because the knitter usually has a number of different lots of yarn to contend with. As a rule, the lots of rayon yarn now being received by full-fashioned hosiery mills are much smaller than the lots of silk formerly employed. If two or more different lots of rayon become mixed and are knitted into hosiery, the mill is practically certain to be in trouble. The chances are that the different lots will show pronounced variations in shade from one another when dyed. Such stockings cannot be salvaged and represent a total loss.

To prevent mixing of lots, one individual should be given the responsibility of checking the cases of yarn as they are received, delivering it to the machines, and keeping a constant check on the number of legs still to be footed from any given lot of yarn. It is a real calamity for a mill to run out of yarn when it has legs remaining to be footed.

The foreman cannot be expected to keep track of every cone of yarn and at the same time perform his other duties efficiently. Therefore, somebody else should be made responsible for the proper distribution of the yarn. This "yarn man" should be selected carefully. He should be somewhat familiar with hosiery and yarn, and he should be imbued with the importance and seriousness of his job.

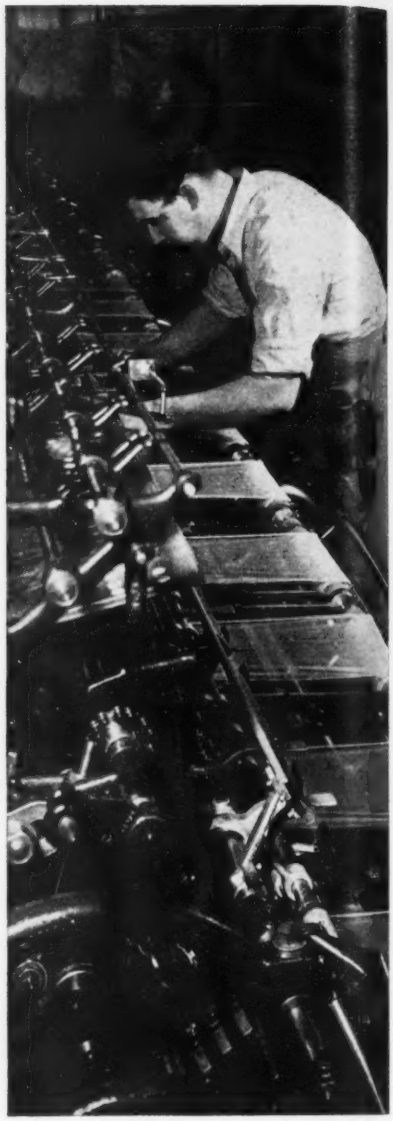
The yarn man should keep close watch on legger production and should make several trips a day through the aisles to guard against the possibility of a knitter obtaining a cone of yarn from the wrong lot, as might happen if he took one from another knitter's bin. The practice of tinting rayon hosiery yarns for identification purposes with fugitive colors has diminished the hazard of mixed lots. There is, however, the possibility of having both 20- and 35-turn yarn on cones with tips of the same color. Therefore, to be certain that no mix-ups have occurred, the yarn man should make frequent checks by looking at the winder's sticker inside cones which are on the knitting machines. The yarn man must be particularly watchful whenever a machine operative is running low cones or scraps. It is cheaper in the end to dispose of scraps via the furnace, than to allow them to get mixed during the knitting operation.

All legs should be footed as soon as possible and not allowed to accumulate in large quantities ahead of the footers. This practice makes it easier for the yarn man to keep tabs on the yarn and lessens the chance of a slip-up or underestimate of footer requirements.

Under present conditions, setting aside a certain percentage by weight of yarn for footing is not sufficient. This is due to the fact that the mill is indeed fortunate if it receives a complete lot of yarn at one time. Often the yarn arrives in dribbles, a case or two one day and a few the next. Accordingly, one cannot count on receiving the whole lot. Trucking companies and railroads are overtaxed with essential freight, and are likely to slip up on deliveries. Although the yarn is insured against damage or loss, this insurance does not cover the loss which a mill will suffer if it knits four or five hundred dozen legs and then cannot obtain yarn from the same lot for footing. Today the knitter can figure only on yarn that is actually on hand and not on that which is supposed to be in transit.

A SAFE RULE to follow: "Do not knit legs until sufficient yarn of one lot is on hand for both the legs and feet." It is better to hold up production because one case of yarn is missing than to go ahead with the knitting and be sorry afterwards.

Formerly we followed the policy, mentioned above, of setting aside a percentage of each lot of yarn for footing. We have found that better practice is to tie up a given number of cones on a footer, keeping track of just how many feet of different sizes these cones produce. The yarn man, knowing how many legs have been and are being knit from a particular lot of yarn, puts aside a sufficient number of cones for the feet, allowing a few extra for safety. The yarn man is not informed as to the total number of pounds ordered of each lot of yarn. Therefore, he is forced to deal with the yarn actually on hand and cannot count on receipt of additional amounts. Another advantage of the system we are now following is that when we finally get toward the end of a lot, there is no large accumulation of small cones. As a result, we do not have the problems of finding out how to get these small cones run down at the lowest cost and finding a place to run them.



Mixing lots of rayon must be avoided in knitting full-fashioned hosiery.

Summarizing, these are the rules which the foreman should follow or enforce when running on rayon yarn:

1. Never leg more than can be footed with yarn actually on hand from a given lot.

2. As soon as a new lot of yarn arrives, tie it up as that automatically curtails leg production on the lot.

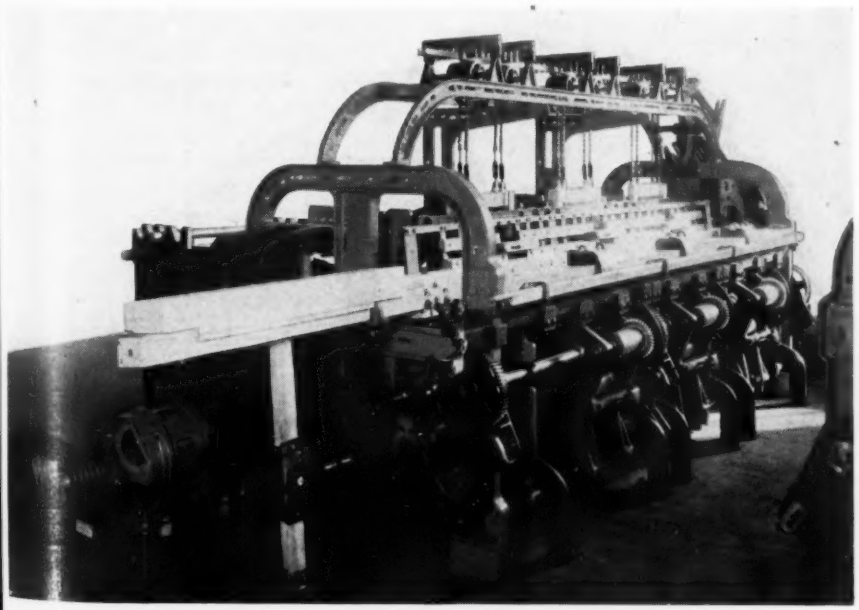
3. Check up on the yarn man occasionally to make sure he is constantly on the alert.

TEXTILE EQUIPMENT NEWS

Narrow Loom for Tubular Fabrics

A loom has been designed by Fletcher Works, Glenwood Ave. & Second St., Philadelphia, for the weaving of heavy webs and heavy tubular fabrics, especially those fabrics which are woven and employ non-stretch yarns, such as firehose. Linen firehose woven on the Fletcher Works loom has passed the Underwriters' tests.

The framework of the loom is designed to absorb the shock resulting from the beat of the batten and also to withstand the strain of the shedding. Vibration is reduced to a minimum by the balancing of the batten motion. The let-off motion is somewhat similar to the arrangement now being used on the Fletcher web loom, known as the Victory loom. The tension on the warps is derived by means of friction rolls. Take-up rolls are entirely new in loom design and the assembly insures an even take-up when weaving a fabric made with a tubular weave. One model of loom has been made with a batten which gives two beats to one turn of the crankshaft, and this type of loom should be particularly interesting to the weavers of heavy webbing and linen firehose. Internal cut-path cams give the harness frames a smooth action and sufficient dwell to the shuttle, which contains a large cop, to clear the shed.



Narrow fabric type loom developed for weaving such heavy fabrics as webbing and linen firehose. (Fletcher)

Aligning Shaft Coupling

A coupling intended to solve misalignment problems in shafts not exceeding a total of 6 deg., has been developed by Barcus Engineering Co., Baltimore, Md.

The coupling for driving and driven shafts comprises a cylindrical housing shell cut with integral gears having stub teeth with a 20 deg. pressure angle. Driving and driven shafts are connected to hubs of generated gears, each cut on a true central segment of a sphere and the teeth are of constant width. The teeth of each spherical gear meshing in the stub teeth of the housing produces a smooth ball action. The specially designed spherical gear is in full mesh on pitch line with the interval gear at all times and with maximum reduction of back lash. Hence, this coupling is well suited for many severe operations where vibration is a serious problem. Advantages stated for the Barcus couplings are that it maintains positive alignment, is capable of transmitting a steady flow of power because of its positive alignment, and friction is reduced to a minimum because of its ball bearing action. These couplings are available in sizes capable of handling up to 128 h.p.

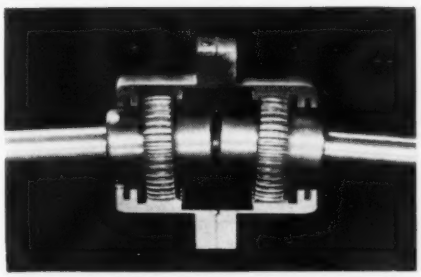


Photo courtesy of Holmes I. Mettee

Coupling showing a total shaft misalignment of 6 deg. (Barcus)

Chemical-Resistant Clothing

Protective clothing, known as Ply Garb, is announced by Milburn Co., Detroit, Mich. In both design and material, Ply Garb sleeves and aprons provide protection for workers exposed to water, acid, fire, alkalis, and other chemicals. The sleeves and aprons are made of plastic laminated cotton cloth and are designed to offer maximum comfort and freedom of movement. Special air vents guard against excessive perspiration. Adjustable shoulder straps make it easy to fit the aprons to the individual. The aprons are available in both full-front and split-front models. In the later, the garment may be fastened around the thighs and legs. The fabric is sturdy enough to resist tears, snags on rough surfaces, and cracking.

Electrical Developments in 1942

As was the case with so many other application engineering problems, developments scheduled for 1942 were necessarily curtailed or postponed by the necessity of producing essential war materials, according to Guy Bartlett, of General Electric Co., in the textile section of his annual year-end review of

electrical developments. Developments of the previous year, however, proved of great benefit to the textile industry in its war effort. As an example, uniformity in dyeing of the products furnished for Army garments was materially assisted by the constant-tension control developed for the Duo dyeing machine, and additional equipments were installed.

Similarly, turbine-electric drive contributed to the war effort by saving power and improving plant efficiency, and added installations of such equipments were made.

In military fabrics, particularly in finishing parachute cloth, the use of the weft-straightening control was extended. The weft straightener so improved the quality of the finishing of parachute cloth that a more uniform folding can be made—a favorable factor in the opening of the chute.

Control File Unit

A file unit that can be placed lengthwise in the front of a deep desk drawer or used on the desk, is being produced by Ver/Tabs, 723 Seventh Ave., New York. The unit consists of 31 durable file pockets equipped with file hooks, suspended on a sturdy wood frame. File pockets and contents remain erect at all times. The capacity of a unit is 1,200 letters. Switching several months accumulation to the regular system or transfer files only takes a few minutes, as the material is compiled when it is dropped automatically into the control unit.

Industrial Scaffolding

A scientifically designed system of steel scaffolding, called Safway, has been developed by Safway Steel Products, Inc., Milwaukee, Wis. The basic unit consists of two end frames, which, when erected, are held rigidly together by two cross-braces. This forms a complete unit 5 ft. wide, 7 ft. long, and 5 ft. high. Desired heights are obtained by adding similar units to the basic unit through the use of coupling pins. Additional lengths are made by adding frames and fastening them together with cross braces.

For new plant building, or old plant modernization and maintenance work, Safway is said to meet the demands for speedy erection, flexibility of installation, and safety of workmen. The scaffolding is mounted on casters and, after once being rolled into position, is locked in place by means of brakes on the casters.

Mill Maintenance Section

Short-Cut to Determine Induction Motor Hp.

Check your motor horsepower! Increased loads caused by war production and three-shift operation may find some motors overloaded while others may be underloaded.

According to Joseph A. Setter, Industrial Dept., General Electric Co., Denver, Col., it is a well-known fact that underloaded induction motors operate at a very poor power factor and draw an excessive amount of lagging current. This in turn wastes vitally needed power in all feeders and in distribution equipment clear back to the generating station power. Frequently these difficulties can be overcome by checking the load and, on the basis of such a check, switching motors on some of the machines to improve the load factor. A simple method whereby loading on integral-horsepower induction motors can be determined with practical accuracy makes use of a hook-on volt-ammeter. With this method it is not necessary to lose productive time, because the leads to the motor need not be disconnected to make the tests to determine motor horsepower.

Seven simple steps should be followed in using this method:

1. Plot a chart with "percent hp" against "percent full-load amperes" for each motor.

2. Locate point *A* as 100 percent from motor name plate reading of amperes at rated hp of motor. Also it is assumed that the name plate voltage is maintained.

3. Disconnect motor from load and read no-load amperes with ammeter

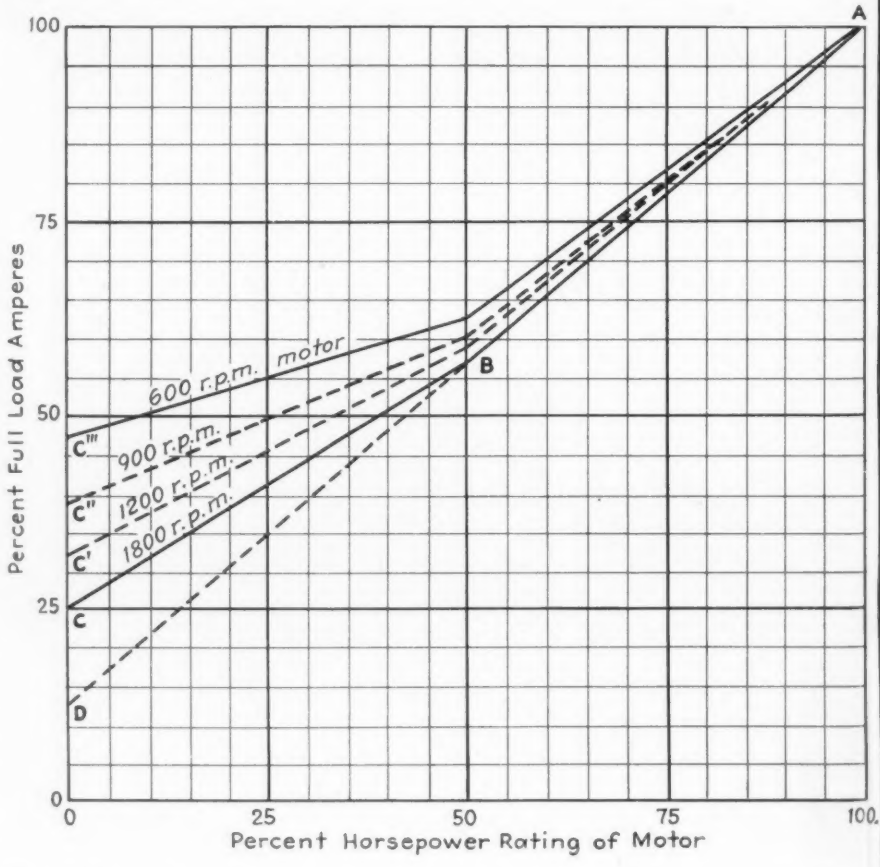


Fig. 1 Curve for estimating horsepower output of a motor at any load by hook-on volt-ammeter readings.

and locate point *C* in percent of full-load current (approximately 25 to 45 percent depending on speed of motor).

4. Locate point *D* halfway between *O* and *C* and draw line *DA*.

5. Locate point *B* on line *DA* at 50 percent of the motor hp rating and draw *CB*.

6. Then line *ABC* will be the approximate curve of the percent horsepower output of the motor plotted against per cent of motor current.

7. For any motor current, read in amperes, calculate the percentage of the full-load current, follow horizontally until line *ABC* is intersected. Then drop down vertically and read the percent load of the rated hp of the motor.

If it is not convenient or feasible to disconnect the motor from the load as suggested in step 3, then the no-load current can be taken from Fig. 1. For example, an 1800-r.p.m. motor has a no-load current of approximately 25 percent, which is the average for motors up to 100 hp. Lower speed motors have higher no-load currents, in the order of 45 percent of full-load current for 600-r.p.m. motors.

It may be surprising to find that the no-load currents are as high as that shown in Fig. 1, but it should be remembered that the no-load current is nearly all magnetizing current at practically zero lagging power factor and that the actual horsepower input from the power system is very low. This accounts for the rather high currents below one-half load where the efficiency of the motor is also lower.

From one-half to full load, it can be seen that the motor current is roughly proportional to horsepower output because both efficiency and power factor are higher and more nearly constant.

This method furnishes a practical and time-saving way to determine the horsepower that an a.c. motor is delivering just from an ammeter reading. Accuracy of between 2 and 3% can be expected, subject of course to the ammeter accuracy tolerance.

Care of Magnesium Warp Beams

Mills fortunate to have magnesium warp beams must care for them properly as they cannot be replaced. American Magnesium Corp. has issued service instruction for these beams.

Magnesium warp beams are furnished with a hard wax finish applied to the base metal. To maintain this finish they should be rewaxed about every month of service. While the beam is rotating in the warper or the lathe, apply an even coat of a hard finishing wax. Rub down with clean cloth to produce a hard polished finish.

About every four months of service resurface the beams. Remove old wax coating down to the base metal. This can either be done with a chemical cleaner, or an abrasive cloth or with No. 1 or 2 steel wool applied with light pressure. Then rewax as above.

Under conditions of high temperature and humidity and when running certain kinds of yarn, it may be necessary to rewax and resurface more often than indicated above. In other cases, considerably longer periods between refinishings have been found satisfactory.

Steel wool and abrasive cloth should be soaked in oil for cooling and to prevent the freeing of magnesium dust particles to the air. Ordinary lubricating oil is satisfactory; soluble oils, or oil-water emulsions, must not be used. Any magnesium dust or oil sludge resulting from the cleaning forms a cer-

HANDLE YOUR RUBBER GLOVES WITH CARE

RUBBER GLOVES, so essential about a dyehouse, where acids and alkalis are handled, must be well cared for to prolong their life. Rubber is vital for our national defense. B. F. Goodrich Co. has issued instructions that will assist in obtaining satisfactory service from rubber gloves. Photos courtesy B. F. Goodrich Co.

Keep two pairs of rubber gloves available for use and wear each pair every-other-day. One pair worn continuously day after day will wear out much more quickly than if given a 24-hr. rest period between wearings.

Don't pull your gloves off the same way you do your dress gloves. Exerting pressure on the fingers of the glove, as illustrated, puts it under strain and may result in a tear.

Dust inside of gloves well with talcum each time they are removed. Hand perspiration clings to gloves and will tend to make the inside walls tacky if moisture is not dried promptly. Talc will also make the surface smooth so hands will slip in easily.

Install a salvage box where wornout rubber gloves and other rubber articles may be discarded. This will insure their being saved and returned to a rubber goods manufacturer for reclaim, and prevent a careless cleanup man from burning or destroying them.

tain fire hazard and should therefore be promptly disposed of by washing into the sewer with a strong flow of water. Smoking, generation of sparks or open flames should be avoided near the cleaning operation.

New Dyes and Chemicals

Flameproofing Compound

For flameproofing textiles, Quaker Chemical Products Corp., Conshohocken, Pa., has announced a new product known as Quaker Pyr-E-Pel. The compound is a white, crystalline powder completely soluble in hot or cold water. For flameproofing textiles, a solution of 1 part of Pyr-E-Pel in from 4 to 10 parts of water (by weight) is used at a temperature of 120 to 160°F. The fabric is passed through this solution and dried in the usual manner at approximately 200°F. It is stated that Pyr-E-Pel is insoluble in all oils and solvents, and hence is not readily washed out when the treated fabrics are dry-cleaned. According to the manufacturers, this product is not affected by liberal amounts of acid or alkali. It is compatible with starches, dextrins, gums, and with certain waxes and sulphonated oils. It will not coagulate colloidal solutions and can be used in the same bath with most finishing materials and pigments. Pyr-E-Pel is said to be equally effective on cotton, rayon, wool, and other types of textiles. Although imparts body and weight to the fabric, it does not stiffen or adversely affect the hand of the treated material.

Protective Skin Cream

Development of a protective skin cream which workers can apply to their hands to guard against dermatitis due to dyes or chemicals has been announced by Cadet Creme Co., 151 Farrar Ave., Worcester, Mass. This product is available in two types. The first, known as Cadet Protector Creme, is designed primarily as a protection against oils, greases, paints, solvents, etc., which may cause skin disorders or are difficult to remove from the skin. The second, known as Waterproof Cadet Creme, is intended for use by textile workers and others exposed to acids, alkalis, dyes, etc. In most instances use of rubber gloves is unnecessary when this type cream is employed. It is removed from the hands by applying Cadet Protector Creme and then slowly rinsing off with cold or warm water. The manufacturer states that both types have been indorsed by industrial physicians, safety engineers, and insurance companies for prevention of industrial dermatitis.

Anti-Mildew Agent

Development of a new mildewproofing agent, known as Ramplex, is announced by Rampel Chemical Co., 247 Park Ave., New York. It is stated that fabrics treated with Ramplex meet the requirements for mildew resistance when tested according to the procedure outlined in U. S. Army Specification T-1212 for camouflage materials. The new product, which is soluble in water, is said to combine the properties of a fungicide, bactericide, and germicide. It is stated also that it does not impair the fiber, affect the appearance or feel of finished fabrics, or injure the equipment in which it is applied. For treating camouflage or sandbag fabrics, Ramplex is mixed with the dye in a 1 or 2% concentration. When used on wool, a 1 to 400 solution is recommended together with a 1% solution of a suitable detergent.

Surface-Active Agents

Two related series of surface-active agents having a variety of textile applications have been introduced by Atlas Powder Co., Wilmington, Del. These compounds, known as Spans and Tweens, are long-chain fatty acid partial esters and polyoxyalkylene anhydride esters. The compounds include emulsifiers, wetting agents, and detergents. They range in solubility from completely water soluble to completely oil soluble. They are non-electrolytes, and are virtually free of soap and inorganic salts.

Indicator for Identifying Textiles

Identification of textile fibers is aided by use of a test kit introduced recently by Eimer & Amend, 635 Greenwich St., New York. The kit consists of two chemicals: (1) Texchrome, a reagent for identifying the fibers; and (2) Texstrip, a compound for stripping colored textiles before they are tested with the Texchrome. To identify the fibers a drop or two of the reagent is placed on the sample and allowed to stand for 2 min. The sample is then washed thoroughly and its color observed. With this indicator, cotton and linen are colored light blue; jute, dark brown; wool, yellow; raw silk, black; degummed silk, brown; cuprammonium rayon, dark blue; acetate rayon and Nylon, pale greenish yellow; viscose rayon, lavender; Aralac, deep greenish yellow; Vinyon, lavender gray; etc.

Plasticizing Oils

Several plasticizing oils for use with synthetic resins to increase flexibility and elongation and to eliminate brittleness and reduce hardness have been announced by Neville Co., Pittsburgh, Pa. Chemically, these plasticizing oils are dipolymers of coumarone, indene, and similar aromatic hydrocarbons. Among the advantages of these oils are the fact that they remain fluid over long storage periods and do not oxidize to a hard material as do some drying oils. It is stated that at least one of the six oils in the series is suitable for use with practically each of the synthetic resins available.

Industrial Skin Creams and Lotions

For protecting workers against industrial dermatitis, Mine Safety Appliances Co., Pittsburgh, Pa., has introduced a series of Fend creams and lotions. Each of the six Fend products provides protection against a number of specific skin hazards, including many chemicals employed in the textile industry. The creams and lotions are easy to apply, and are readily removed with mild soap and warm water. It is stated that they offer no interference with the normal action of the skin glands.

Glycerine Substitute

A glycerine substitute, developed originally in Europe before the first World War, has recently been introduced in this country by its inventor, Dr. S. W. Landsberger, 160-15 Seventh Ave., Whitestone, L. I., N. Y. The product is said to be similar to glycerine in physical properties, soluble in water and alcohol, highly hygroscopic and non-crystallizing.

TODAY'S *Bad News* FOR THE AXIS

TOMORROW'S *Good News* FOR *You*

AWARDED ATWOOD

Besides contributing to the deadly effectiveness of Uncle Sam's potent PT boats The Atwood Machine Company is using its resources of technical skill and experience to solve many problems of acute importance to the war effort relating to its own specialized field of yarn producing and handling equipment.

Out of this have already come advances and developments that are going to prove valuable and important to you from the very outset of the post-war period.

Keep in touch with ATWOOD. Watch for future announcements. In the meantime we'll be doing our utmost to hasten the time when we can once more work together.

THE
ATWOOD
MACHINE COMPANY

STONINGTON CONN., U. S. A.

SALES OFFICES: STONINGTON · CHARLOTTE · LOS ANGELES · MANCHESTER, ENGLAND · BUENOS AIRES
SAO PAULO · MEXICO CITY · MELBOURNE · SYDNEY · BOMBAY · MADRAS

News of Suppliers

Whitin Machine Works and the Paul Whitin Mfg. Co., Whitinsville, Mass., last month received an award for alertness in industrial Air Raid Precaution from the Massachusetts Committee on Public Safety. Preceding the ceremony an evacuation and blackout demonstration was witnessed by the State ARP officers.

E. I. du Pont de Nemours & Co., Wilmington, Del., on Jan. 4 was presented with a special award of honor by the National Safety Council "for distinguished service to safety." Col. John Stilwell, president of the council, stated that DuPont had established "one of the finest safety records ever made by any industrial organization in the United States," adding that 38 of the DuPont plants had no reportable accident for the last 18 months and that one of these plants had previously set a world's record of over 11 million man-hours without reportable accident.

Owens - Corning Fiberglas Corp., Newark, Ohio, has appointed Dr. Albert W. Davidson, professor of chemical engineering and head of the industrial engineering curriculum at Rensselaer (N. Y.) Polytechnic Institute, as scientific director of its research laboratories. These laboratories employ some 400 engineers and technicians who, at the present time, are practically 100% engaged in activities designed to fit glass fiber materials to the developing needs of the war program.

Fostoria Pressed Steel Corp. and its Chicago industrial service representative, the Hyre Electric Co., staged a 3-day conference at La Salle Hotel, Chicago, Dec. 28 to 30, at which was dramatized the story of near infra-red the electrical heat that saves time in drying, pre-heating and dehydration. The sessions included lectures and personally conducted tours of a six-booth demonstration of the theory, application, installation and distribution, of infra-red equipment.

DEAN M. WARREN, lately in charge of technical publicity at General Electric's Nela Park, Cleveland, who has been transferred to the Empire Division of the firm's lamp department at Buffalo. Mr. Warren will devote full time to wartime lighting of industries in the Buffalo area.

CLIFTON C. CANDEE, who has been appointed technical service director of the Lake and Pigments Department, Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J. Mr. Candee has been identified with the activities of this department since joining the firm in 1934. He succeeds Dr. Shive, who has recently been appointed to supervise production and development of chemicals for synthetic rubber for the Rubber Reserve Co., as noted.

Arlington Machine Works, Arlington Heights, Mass., has been sold by Arthur Birch to his nephew, Sydney Philip Birch, who will continue the business. Arthur Birch has retired.

Hercules Powder Co. — Theodore Marvin, advertising manager, has been selected as industrial advertising "man-of-the-year" for 1942 by *Industrial Marketing Magazine*. The award was based on the year 'round high standard of Hercules advertisements directed to the chemical industries.

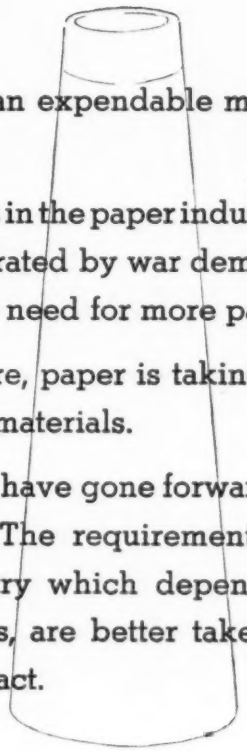
Pittsburgh (Pa.) **Plate Glass Co.** has appointed W. I. Galliher as executive sales manager of the Columbia Chemical Division, manufacturers of heavy industrial chemicals, including alkalies, chlorine, calcium chloride, and specialties. Mr. Galliher, formerly director of sales, succeeds Eli Winkler, who is retained in the capacity of executive consultant.

Krebs Pigment & Color Corp., which has been a wholly-owned subsidiary of E. I. du Pont de Nemours & Co., for the last eight years, is dissolved. Its functions will be carried on by the Pigments Department of the Du Pont company. This change of name involves no change in the personnel of the sales, manufacturing or research di-

NEW TEXTILE SERVICE LABORATORY IN ATLANTA

PENICK & FORD, LTD., INC. have installed a new textile service laboratory in connection with their southern headquarters in the Bona Allen Building, Atlanta, Ga. The laboratory has complete chemical analytical equipment and is equipped with a constant-temperature, controlled-humidity room in which accurate physical testing of yarns and fabrics is conducted. The laboratory was established by the Technical Sales Service Department of Penick & Ford and is available to all textile mills, particularly in connection with warp-sizing and finishing problems.

Expendable



Paper, too, is an expendable material in wartime.

Developments in the paper industry have been greatly accelerated by war demands, thereby increasing the need for more paper products.

More and more, paper is taking the place of many critical materials.

At Sonoco we have gone forward ten years in the last two. The requirements of the vital Textile Industry which depends on Textile Paper Carriers, are better taken care of because of this fact.

WAR SAVINGS BONDS

EVERY PAY DAY

sonoco

SERVES THE WORLD

PAPER CARRIERS

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

WALTER E. MURRAY, formerly sales manager of Warwick Chemical Co., West Warwick, R. I., has been appointed manager of the Textile Division and vice-president of Impregnole Corp., a subsidiary of Warwick Chemical Co.

visions, nor will there be any change in the management or policies.

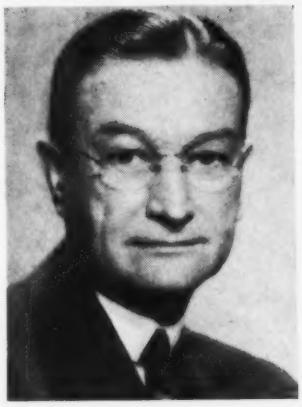
George A. Urlaub, who resigned as head of the Knit Goods Section of the OPA on Dec. 1, has returned to his textile consulting practice, with office at 305 Hamilton St., N. W., Washington, D. C.

Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., has organized an American Red Cross First Aid Detachment, the first to be organized in an industrial plant under the auspices of the Passaic, N. J., chapter. The detachment is designed to function in disasters of any nature, including bombings, sabotage, explosions, fires and floods, and will assist the plant doctor and hospital staff. Manhattan also has a new 14-room hospital staffed by a physician, five nurses, a secretary and a clerk.

Johnson & Bassett, Inc., Worcester, Mass., has elected Chester E. Williams as president, treasurer and general manager. Mr. Williams has been with the firm for 22 years, recently serving as vice-president and treasurer. He succeeds the late Arthur J. Bassett. Charles Turpin, a son-in-law of Mr. Bassett, was elected vice-president, and S. S. Spence, assistant treasurer.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., re-entered radio on Jan. 10, with a new program featuring John Charles Thomas, baritone, who will serve both as master of ceremonies and as singer, supported by Mark Warnow's orchestra and the Lynn Murray male chorus.

Michigan Alkali Co., Wyandotte, Mich., and its affiliate, the **J. B. Ford Co.,** have consolidated as one company to be known as **Wyandotte Chemicals Corp.** The consolidation involves no change in ownership, but is in the interest of more efficient operating. E. M. Ford, formerly vice-president and treasurer of Michigan Alkali Co., is president of the new corporation. He occupies the position which was to have been assumed by his father, E. L. Ford, grandson of Capt. John B. Ford, founder of the business. E. L. Ford died suddenly on Dec. 20. F. S. Ford and W. F. Torrey are vice-presidents of the new corporation; Ford Ballantyne is secretary and treasurer. Other officers are: S. T. Orr, vice-president in charge of manufacturing; I. H. Taylor, vice-president in charge of sales; G. W. Schwarz, controller; C. B. Robinson, vice-president in charge of sales, J. B. Ford Division; and Bert Cremers, vice-president in charge of sales, Michigan Alkali Division.

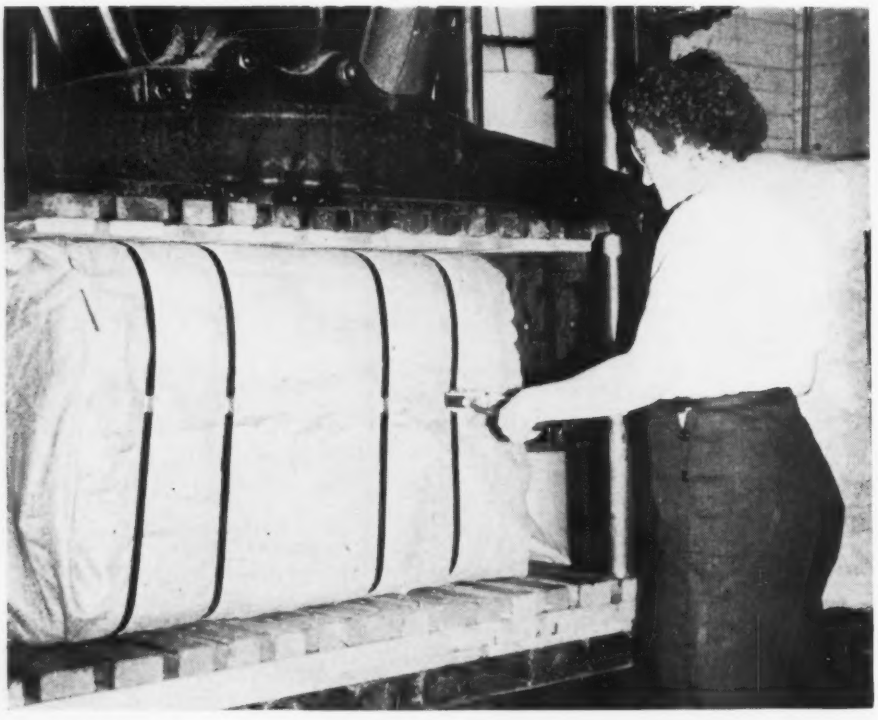


I. H. TAYLOR, vice-president in charge of sales, Wyandotte Chemicals Corp.

BERT CREMERS, vice-president in charge of sales, Michigan Alkali Division, Wyandotte Chemicals Corp.

Brown Instrument Division of the Minneapolis-Honeywell Regulator Co. has recently graduated a group of 13 army officers who were assigned to take the course at the school in Philadelphia operated by the company. The officers are combustion engineers who will supervise the efficient heating of the many camps and hotels now run by the army for housing its troops.

WOMEN IN MEN'S JOBS



WOMEN AND WAR—More and more in the textile industry women are stepping in to fill the places of men who have been called to the front. One large New England manufacturer has a woman operative in the baling operation. She trucks, handles, wraps and straps bales weighing up to 600 lb. This is probably the first time a woman has been regularly used in this operation. Acme Steel Co's 5/8 in. strap is being used here.

BARNES STRAPPING FOR STRENGTH and RESISTANCE TO HEAT-OIL-STRETCH

Fully up to the high standard of our famous belting and textile aprons is our outstanding line of textile-mill strapping. For lug, harness, check, and p.cker straps we offer a choice of specially processed Hair-On leather and plain leather. Both types are specially treated to meet the requirements of the particular function they are expected to serve. All Barnes straps are made from prestretched leather.

At the right is shown one of our many straps—the Barnes Gam-Oil lug strap—which typifies the high quality of our complete line. Our lug straps, which are supplied in from two- to five-ply thickness, are formed to fit the pickerstick accurately. They are treated with a special preparation and allowed to set properly before shipment so that they will be resistant to heat and oil. Barnes lug straps will withstand the most powerful throw of the shuttle, at the same time reducing noise and prolonging the life of the pickerstick. These straps are slotted to exact specifications. Many tests have shown Barnes lug straps to last from two to four times as long as any leather substitute.

Below are shown some of our more common textile straps, such as binder, bunter, power, harness-roll, jack, bumper, and top-roll straps. Also shown is a friction disc. These products only typify our complete line. We are prepared to supply any strap a textile mill can use. You may confidently call on the Barnes Textile Leather House to fill your complete requirements—promptly, efficiently, painstakingly.

HAIR-ON (G.O.G.) HARNESS STRAPS

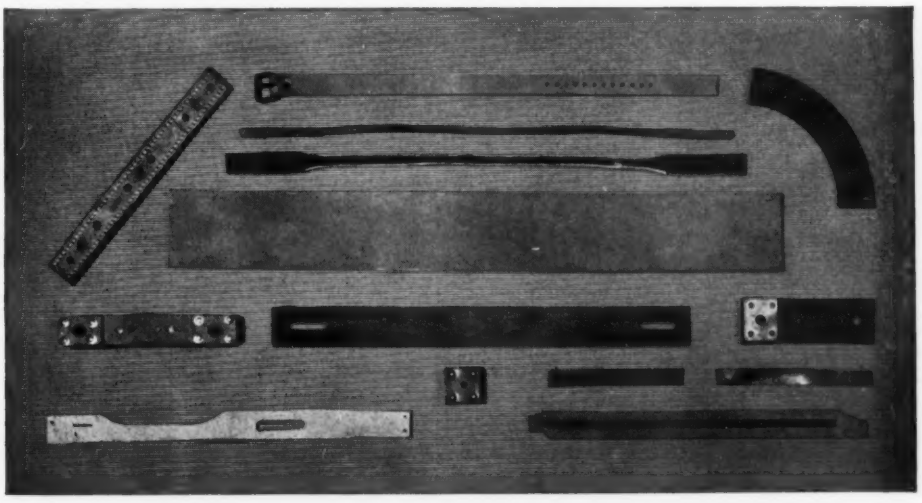
For maximum wear
Resistant to oil and heat
Cut from Firm First Quality Center Stock
Uniform in thickness
Flexible—minimum stretch
Processed round or flat
Punched to specifications
ALL SIZES

HAIR-ON (G.O.G.) LUG STRAPS

An Alternate Choice to Gam-Oil
Minimum stretch
Wax-thread stitched
Slotted to specifications
2-ply Hair-on
3-ply Hair-on
ALL SIZES

HAIR-ON (G.O.G.) CHECK STRAPS

Resistant to oil and heat
Cut from Firm First Quality Center Stock
Minimum stretch
Slotted to specifications
3/16 inch or Two-Ply 3/8 inch
ALL SIZES



BARNES OAK HARNESS STRAPS

An alternate choice to Hair-on
Cut from Firm First Quality Center Stock
Processed round or flat
Punched to specifications
AVAILABLE IN ALL SIZES

GAM-OIL LUG STRAPS

For maximum wear
Resistant to oil and heat
Prestretched
Wax-thread stitched
Saves pickerstick
Reduces noise
4-Ply regular
5-Ply regular
5-Ply Heavy
ALL SIZES

BARNES OAK CHECK STRAPS

Cut from Firm First Quality Center Stock
Prestretched
Slotted to specifications
3/16 inch or Two-Ply 3/8 inch
ALL SIZES

HAIR-ON MINERAL TAN (G.O.G.) GAM-OIL PICKER STRAPS

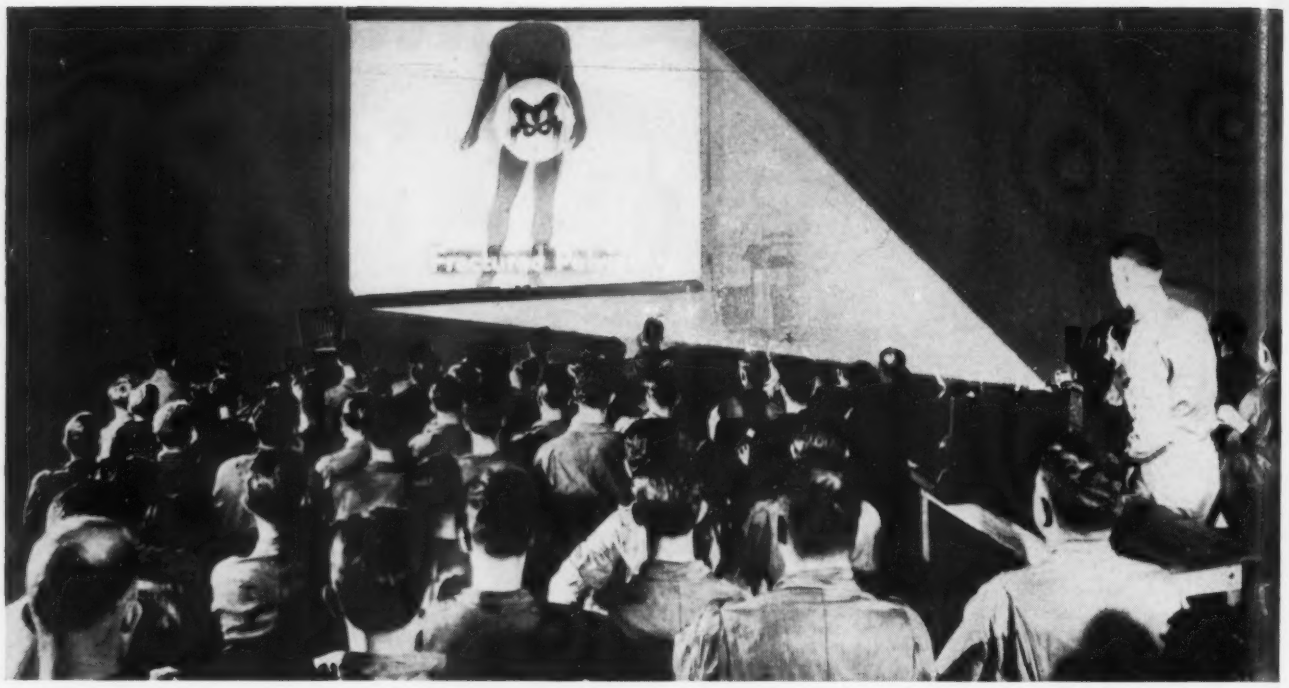
Oil resistant
Cut from Firm First Quality Stock
Pliable
Minimum stretch
Furnished either dry or oily
ALL SIZES

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE Textile Leather HOUSE

SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience
APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING



Photos courtesy of Jam Handy Picture Service, Inc.

Fig. 1. Demonstrations with slidefilm speed up first-aid instruction of workers.

Slidefilm Teaches First Aid

Pictures show workers proper measures to take when industrial accidents occur

By LYNE S. METCALFE

AMERICAN INDUSTRY suffered a total loss of 460,000,000 man-days of labor, and a monetary loss of $4,000,000,000, through preventable accidents in 1941. That these figures may, and probably will, show an increase in 1943 due to the employment of too much inexperienced help as a result of the war effort and the necessary speeding up of operations, is generally considered inevitable, unless steps are taken to meet the situations through education.

Industry is approaching the problem in two ways, generally speaking. First, by throwing every precaution around the worker, and intensifying education in safety procedures. Second, by broadening the base of first-aid instruction in war plants. Naturally, the most important phase of this effort lies in the prevention of accidents; but, since accidents will happen, getting injured workers back on the job again as rapidly as possible tends to reduce loss in man-hours and in production.

The textile industry faces this problem along with other industries, and an improved method of giving first-aid instruction in the mill may help greatly in achieving results.

It is realized in the industry that a wider spread of first-aid knowledge throughout plants and understanding of procedures to follow "before the doctor comes," are primary needs. Mill doctors and nurses as a rule carry heavy responsibilities, which limit the time that may be spent in instruction. Accidents don't always happen when an experienced person is on the scene, and, in emergency first-aid treatment, time often is a vital factor. Proper measures taken shorten the period of unproductivity of the injured mill worker in many instances.

To tried and tested first-aid instruction mediums—lectures, textbook study, and demonstration——has been added the auxiliary of visualization by means of the picture screen, which shortens the period of first-aid instruction.

A SLIDEFILM KIT-SET is available comprising 20 slidefilm productions (two of which are in Technicolor); 13 disks or records each carrying a verbal talk or lecture for each of the 20 slidefilm subjects; printed lesson-guides (one for each slidefilm); and an instructor's manual which, after the instructor has himself studied the course, enables him or her to conduct classes almost automatically.

At intervals in these visualized lessons, cues suggest where the instructor may stop the film and record and make a demonstration of the subject on the screen. Or students may practice what has been pictured and verbally explained.

The purpose of the films is to take advantage of the ability of pictures to impart a quicker understanding of fundamentals, as compared with verbal lecture and text-book study alone. In addition, the instructor is provided with the recorded lecture, amplifying the film, voiced by a professional, so that discussion and demonstration become the instructor's main responsibilities.

With this augmented system of instruction, classes in first-aid practice

How About the Business of Peace?

TODAY your chief job is doing things to help beat the Axis. You are getting production of goods vital for our armed forces. You are conserving manpower, materials, time. You are buying War Bonds, more and more of them. You are doing all you can to hasten the day of Victory.

Then will come the Business of Peace. What about the new, better products the public is going to want? What about the markets, lost or weakened because of these years of war? Are you thinking of those things? Are your plans being laid? Don't put it off for it may be "later than you think."

And in your planning, we suggest you look to the importance of identifying the new products you will make—not only Identification to satisfy the law, but Identification to insure the stability of the markets you win, Identification to protect your own good name.

Kaumagraph's business is Identification for textiles—marking, labeling, packaging. Our research has solved some pretty tough wartime Identification problems—new methods, new things that are going to be good for the Business of Peace.

Right now, while your planning is getting under way, is a good time to send for a Kaumagraph Identification Man. He will show you how these wartime developments can fit into the Business of Peace for you.

Identification Headquarters since 1902

KAUMAGRAPH
Wilmington, Delaware

Dry Transfers
Prestomarks
Embossed Seals
Lithographed packaging

New York Office, 16-22 E. 34th St. · · Representatives in Principal Textile Centers of the World

may be held throughout the mill by intelligent employees, achieving a broader base of first-aid knowledge to meet emergencies when and wherever they may occur, and with a minimum use of employees' time.

The only "properties" necessary to conduct the course are a few simple articles outlined in the manual, and a live model in a bathing suit for demonstrations.

The program covers every conceivable physical emergency that may arise in the average textile mill. Each filmstrip carries from 31 to 77 individual pictures as follows:

Purpose of first aid (55 pictures)—A preview of the course, and some of its applications.

The body—Part I (Color—45 pictures)—Muscles, tendons, skin, blood, skeleton, head, trunk, upper and lower limbs.

The body—Part II (Color—54 pictures)—Heart, arteries, capillaries, veins, breathing, nutrition, and nervous system.

Shock (31 pictures)—How to recognize and treat victims of shock.

Unconsciousness (62 pictures)—Unconsciousness due to such things as heat stroke, heat exhaustion, apoplexy, and fainting.

Common emergencies (56 pictures)—Appendicitis, choking, diarrhea, earache, toothache, common colds, sunburn, poison ivy and sumac, insect bites, and fainting.

Minor injuries (62 pictures)—Strains, sprains, dislocations, bruises, frostbite, foreign bodies in eye, ear, nose and stomach.

Wounds—Part I (49 pictures)—How to stop bleeding and prevent infection.

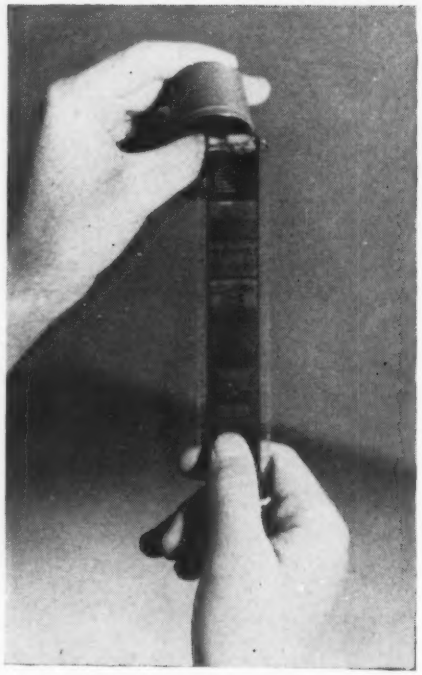


Fig. 2. Slidefilm is a length of standard motion picture film on each frame of which is a picture or a title.

Wounds—Part II (57 pictures)—Abrasions, clean-cut wounds, deep puncture wounds, jagged or torn wounds, animal bites, and snake bites.

Dressings and bandages—Part I (75 pictures)—Materials used in bandaging wounds, how to apply bandages.

Dressings and bandages—Part II (77 pictures)—Commonly used bandages.

Artificial respiration (32 pictures)—How to apply artificial respiration by the prone-pressure method.

Burns (39 pictures)—Treatment of drug poisoning, food poisoning, and carbon monoxide poisoning.

Fractures—Part I (59 pictures)—Two principal types of fractures, general first-aid treatment; specific treatment for fracture of leg, forearm, upper arm, elbow, finger and collar bone.

Fractures—Part II (56 pictures)—How to treat fractures of skull, nose, jaw, spine, ribs, pelvis, thigh, kneecap, feet, and toes.

Fractures—Part III (64 pictures)—Fixed-traction splints.

Moving the Injured—Part I (47 pictures)—Moving the injured on various types of stretchers.

Moving the injured—Part II (63 pictures)—How to improvise a stretcher, and how to carry injured when stretcher cannot be made quickly.

With at least one worker in every aisle familiar with the fundamentals of emergency treatment, the loss of time and suffering of an injured or suddenly afflicted employee are greatly reduced at a time when every hour of every day counts.

In addition to the benefits derived from a plant-wide first-aid personnel, knowledge gained through such a course is of service at home and on the street. It matters little whether a worker is injured at the loom or in the home, the amount of time lost and suffering caused usually are the same. With the OCD doing what is possible to instruct the public in first-aid measures, the mill executive who provides first-aid instruction for his employees is not only contributing to his own conservation of man- and woman-power, but is adding something to the home defense line.

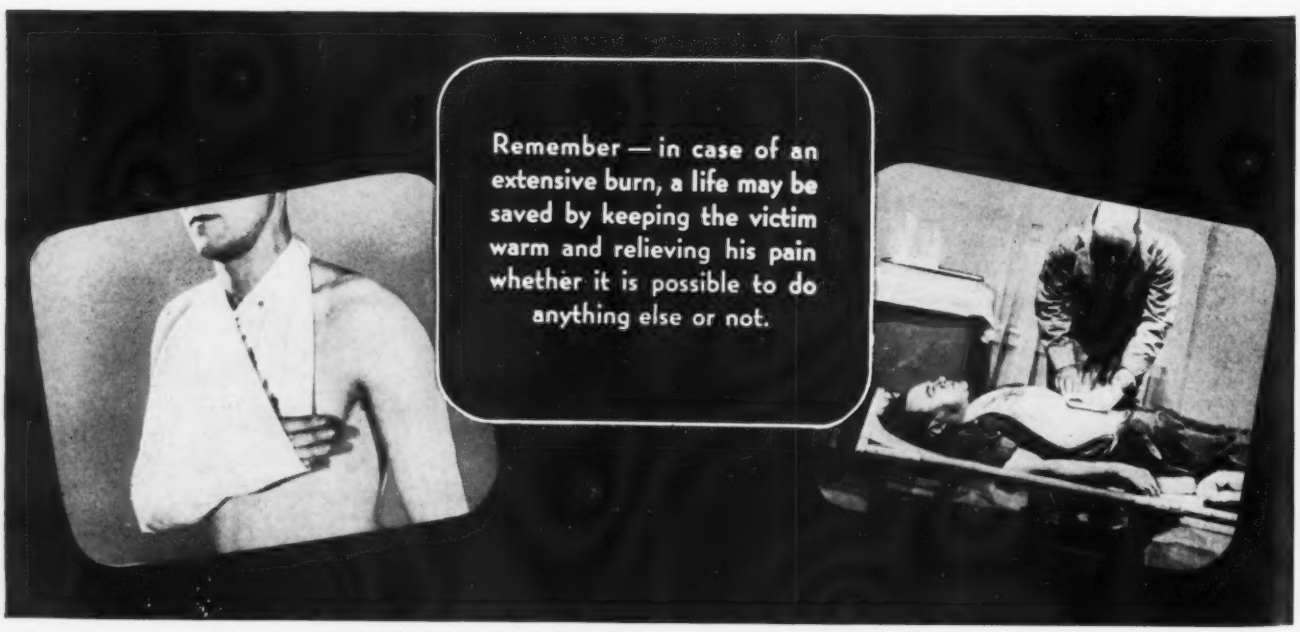

Remember — in case of an extensive burn, a life may be saved by keeping the victim warm and relieving his pain whether it is possible to do anything else or not.

Fig. 3. Typical scenes from the slidefilms.

I THOUGHT THE SUPPLY SERGEANT WAS KIDDING WHEN HE SAID "THESE SOCKS ARE MADE OF THE FINEST, 2-PLY, MERCERIZED, LONG STAPLE AMERICAN COMBED COTTON"

Hard wear . . . rough usage . . . that's the description today for the treatment given garments worn by the men of our Armed Forces. Gunnery, skiing, tank corps, paratroops or what's-your-specialty-soldier—regardless, it's a stiff order. The Army provides the best of everything for soldiers. Because specifications approve the higher grades of mercerized yarns, durable Dixie durene is furnishing important help for Army needs.

10% OF DIXIE'S PAYROLL IS INVESTED IN WAR BONDS

Dixie MERCERIZING CO., Chattanooga, Tenn.

Dixie Durene . . . A Product of Controlled Manufacture

AMERICAN COTTON MADE IN U·S·A

More Textile "E" Awards Given

AMONG THE EVER-INCREASING NUMBER of textile recipients of the Army-Navy "E" Award, a few more are represented in the pictures shown on this page. To time of writing there were about 70 textile mills flying the "E" pennant. Additional firms given the honor since last report in these columns are listed on page 144 of this issue.

ARAGON-BALDWIN MILLS, Whitmire, S. C.—(left to right) R. E. Henry, president and treasurer of the firm; Lt. Com. Ernest Burwell, U. S. N.; W. A. Bolin, employee representative.

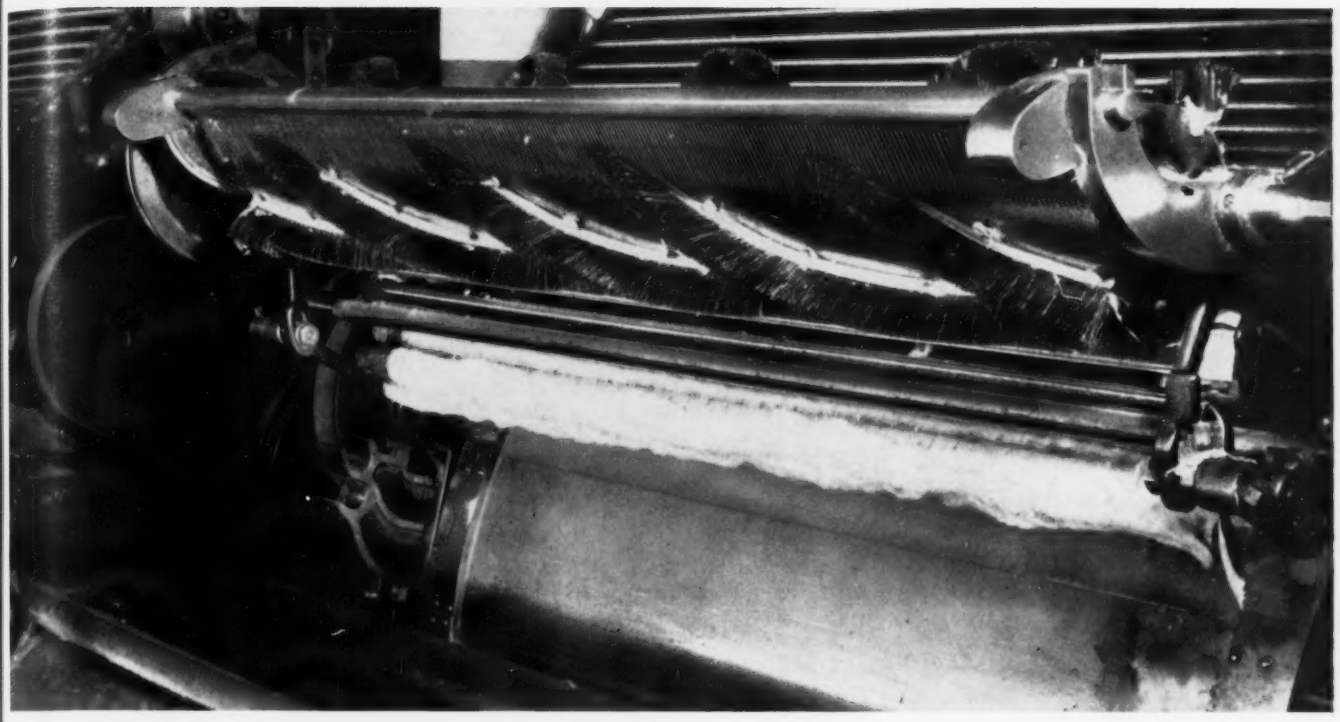
E. I. DU PONT DE NEMOURS & CO., Wilmington, Del., Nylon Research Laboratory and Pilot Plant—Brig. Gen. Benj. W. Chidlaw, Army Air Corps; Walter S. Carpenter, Jr., president of Du Pont Company; Dr. W. W. Heckert, assistant director of Nylon Research; Capt. C. M. Bonvillain, Director of Boiler and Turbine Laboratory of the Philadelphia Navy Yard.

SUNCOOK MILLS, Suncook, N. H.—J. Linzee Weld, president and treasurer, at microphone; at right, behind Mr. Weld, is Lt. Col. McDonnell, U. S. A., who made presentation.

READ & LOVATT MFG. CO., Weatherly, Pa.—(left to right) Lt. Col. Carl R. Borkland, Army Air Corps; E. C. West, vice-president and general manager of the firm; Lt. F. Gordon Blee (SC) U. S. N. R.

SHOE LACE CO., Lawrence, Mass.—At center, Maj. Halsom R. Battley, Army Air Forces, who presented the award; at left, Richard Ward, president of the firm. Others include Naval officers, Mayor Meehan of Lawrence, employees, etc.

BELLE KNITTING CORP., Sayre, Pa.—Rear Admiral William Young, U. S. N. (left) and Sidney E. Kay, general manager of firm (right).



Here is How a Fullergript Set of Card Brush Refills Look Ready to Operate

When brush materials are gripped in Steel—like Fullergript—you have no worries about atmospheric temperatures affecting the brush materials or holding method—no tufts to fall out from splitting blocks or cement loosening.

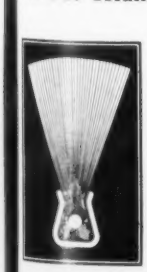
That's why hundreds of flat cards in mills today use Fullergript, and are constantly replacing old tufted construction as fast as possible. These preformed spiral all-metal back strips are easily attached to your present wood cores by following our simple directions.

Study the photograph above. There are longer bristles at each end of brush strip to clean the ends of the flats where there is no card clothing and keep them free of oil and lint. Our Brush construction packs material into a continuous, dense strip with no gaps to permit insufficient cleaning of the flat clothing.

Cleaner Top Flats Mean Better Carding

HERE'S THE INSTALLATION RECORD OF ONLY SIX MILLS IN SIX STATES. NAMES ON REQUEST.

STATE	TRIAL ORDER	MACHINES NOW EQUIPPED WITH FULLERGRIPT
Maine	6 sets	202 machines
Georgia	6 sets	114 machines
Massachusetts	2 sets	102 machines
South Carolina	2 sets	104 machines
Alabama	12 sets	139 machines
Rhode Island	6 sets	242 machines



Over 5000 Cotton Cards are in use today with Fullergript Replaceable Brush Strips. Why not investigate the economy and greater efficiency of these remarkable brushes? We are confident that if you will give them a trial on a few machines, you will want only Fullergript Brushes.

Many Carders started with trial sets of Brush Refills, and results meant building up to full installations over a period of excellent performance. These mills are not located in any one section of the country but spread over many States.

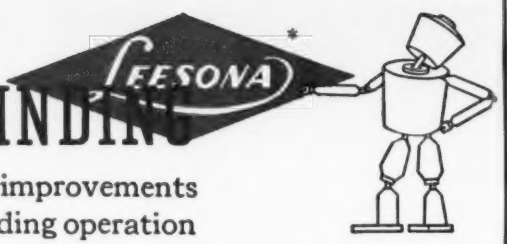
(Card Room at Manville Jenckes Corporation. Full complement of our Brushes on all cards.)

The FULLER BRUSH Company

3594 MAIN ST., INDUSTRIAL DIVISION 8C, HARTFORD, CONN.

THIS IS NO. 37 OF A SERIES ON

GETTING THE MOST FROM WINDING



Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

LUBRICATION OF ROTO-CONER*

The lubricating system of the Roto-Coner* has been designed to provide maximum protection with a minimum amount of attention. Practically all moving parts are completely enclosed and automatically lubricated by the splash system.

A visible oil gauge at the head end of the winder shows at all times the oil level in the reservoirs. Small quantities can be added from time to time so that the gauge will be always half-full. A high-grade petroleum oil having a Saybolt viscosity of 300 seconds at 100° F. is recommended.

Regular Oiling Schedule

Once every day the drive head ball bearings should be lubricated (with the winder stopped), using the same type of oil as in the frames.

The following points should be oiled once a week if the machine is operating 40 hours, twice a week if running 80 hours: traverse shaft ball bearings, conveyor pulleys, conveyor and cam chains. The switch roller and plunger also need weekly oiling. At these and other points, an oil having a Saybolt viscosity of 120 to 150 seconds at 100° F. is recommended.

Mills producing 5/8" paper tubes at speeds of 500 to 600 y.p.m., should be sure that the tube holders are given a drop of oil every doff when running counts finer than 30s, every other doff when on counts coarser than 30s.

Franklin holders require a few drops of oil once a month.

Paper cone holders should be greased once a month, using #505 grease. Where the Builder is used, it should be oiled once a week. Wood cone bushings are to be oiled every 80 hours.

It is important to wipe up any excessive oil which might drop on the bed or conveyor belt. Frame screws SC-1700 should also be checked to prevent oil leaking onto the conveyor belts.

Yearly Cleaning of Oil Tubes and Reservoirs

Once a year the oil can be drained from the machine, and the oil tube, oil ring reservoirs and connections can be cleaned. This will insure against any section not receiving ample lubrication due to the oil tube becoming clogged.

With the plug at the remote end of the winder removed, the oil is allowed to drain out. Frame caps are also removed—and since each fifth frame cap is assembled to the frame by means of two long bolts which also go through the Shelf Bracket Feet, the Shelf will have to be supported by a block located under the Shelf and on Cam Shaft Housing (Fig. 1).

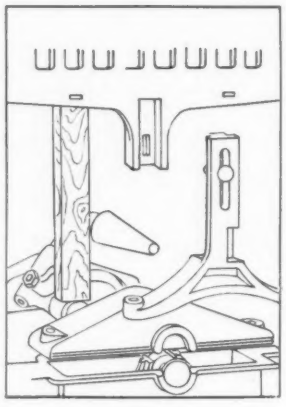


Fig. 1

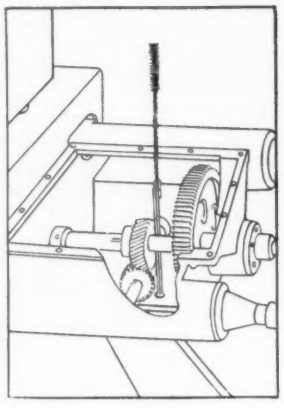


Fig. 2

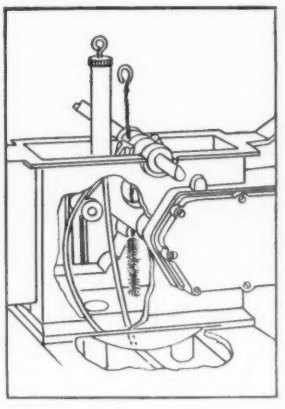


Fig. 3

With the oil drained from the machine, an "electrician's snake" without brush should be inserted through the tube from remote to head end; then with the brush attached (Fuller Brush, Catalog #1128), it should be snaked in through the opening at the head end created by removal of the pilot motor and base (Fig. 2), and drawn slowly through the tube to the remote end.

While drawing the brush through the tube, the frame connections should be probed with Fuller Brush, Catalog #1127 (Fig. 3). This brush should be allowed to remain in the oil tube to frame connection to prevent oil and lint being forced back into the frame. (This is a two-man job; one to draw the brush through the oil tube, the other to probe the connections.)

All excess oil in the oil reservoirs can be removed with a suction pump. Then, with the plug at the remote end back in place, the machine should be filled with 15 quarts of Solnus Oil (or equivalent) for each 100 spindles. Oil that has been drained from the reservoirs can, of course, be used again, after it has been strained through a felt cone.

In replacing frame caps, the gaskets (44-6-2) should be inspected and replaced if damaged.

Quarterly Check on Supply

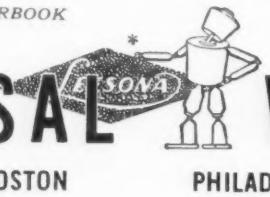
While the above measures need be taken only once a year, it is wise to check the frames at least once every three months. The oil gauge at the head end of the winder can be depended upon to indicate the amount of oil in the reservoirs, but this periodic inspection of all spindles will reveal any case of the oil tube becoming clogged.

Should a spindle be lacking oil, it will drop abruptly onto the traverse when the starting handle is pressed down. When such a condition prevails, oil should be added. The machine should also be checked for level and alignment (see "Getting the Most from Winding" No. 20).

After allowing three or four hours for the oil to reach its level, another check should be made. If any spindles are still not fully supplied, it is logical to assume that the flow of oil between sections has become obstructed, in which case, the oil tubes and connections must be cleaned as related above.

See our Catalog in TEXTILE YEARBOOK
43-GMW-37

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"



UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

*Reg. U.S. Pat. Off.

THE OVERSEERS' CORNER

VERBAL VS. WRITTEN ORDERS

A PETE AND BILL DISCUSSION

Bill came out of the office with a far-away look in his eyes that was part anger, and part uncertainty. He did not even see Pete who was standing close by.

"What are you dreaming about, Bill?" said Pete with friendly amusement at the other's discomfort. "Forget something?"

"No, *I* didn't", came back Bill, somewhat startled, "but Hank did. He didn't carry out my instructions about stopping that compressor from 12 to 6 in the morning and now he swears I didn't tell him to do it."

"Have you any proof that you really did give him the instructions, or did you just intend to do it, Bill?" asked Pete softly.

"Don't need any proof. I know my memory is better than that!" snapped Bill.

"Written orders can save you a lot of uncertainty and embarrassment. Just keep a pad and pencil in your pocket; write out your orders, and keep a copy," advised Pete.

He did not even see Pete . . .

"I don't have time for all that fancy letter writing on my job, and the help would think I'd gone nuts. Besides, I've got other things to think about," Bill said stubbornly.

"Such as trying to remember what your orders were, if any?" chided Pete.

Should overseers depend on verbal orders, or give their instructions in writing?

Letters from Readers

Wants Harmony and Skill, but No Presents

"Xmas Presents from the Workers" Pete & Bill, Dec., 1942

Editor, Overseers' Corner:

I am not in favor of the help giving the boss presents, and I don't think the so-called boss should forward this idea. He shouldn't let the help get anything on him because they will use it to obtain favors later on.

There is in all rooms a gang that doesn't get along any too well with the rest of the workers or with the boss. When asked to contribute they start the old cry of "sucker". This just keeps the help at odds and no overseer can run a room for the best that's in it with this division among the help.

The boss should tell his help he doesn't want a present. All he wants is harmony and skill to do a perfect job. Then the overseer can say to anyone: "I have a room full of help who think I am a real man and who do a great job when I am in or out of the room."

C.J.S. (*N.Y.*)

An Efficient Employment Policy

"The Employment Office" Pete & Bill, Nov., 1942

Editor, Overseers' Corner:

Frankly, the writer thinks Pete and Bill are both right in their comments regarding the employment office. Pete's belief that there is nothing basically wrong with the utilization of the employment office in hiring new workers is correct. Bill's argument is sound because the employment systems are more or less in their infancy, and there are still many "bugs" in employment office procedures that will have to be worked out. Employment offices usually clear all information on a new applicant before putting him to work, and they are therefore at a disadvantage when competing with the mill that hires direct. Few skilled workers will wait to have their records examined when they can go to work immediately at another mill.

Personally, I know of one mill that has taken the best features of hiring direct and using an employment office. A new worker coming into this company may either contact the overseer or the employment office. All applications, however, must pass through the employment office. A new worker is employed on the basis that if his refer-

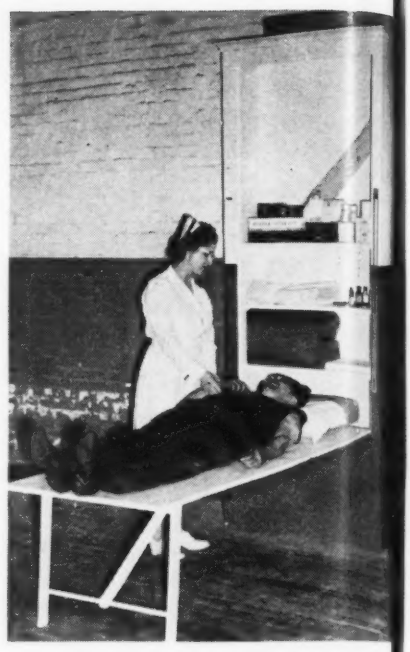
CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing material on these pages or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

ences are not in order he will be immediately released. Nevertheless, he is put to work at once, and there is no waiting in the employment office.

This employment office segregates the skilled and unskilled workers. The skilled worker may apply without having to wait two or three hours or perhaps a day for his turn to appear. The unskilled have to await their time in order to be classified and placed in the department in which they seem best suited. This system prevents the skilled man from becoming discouraged in not being able to obtain a job at once as it allows him the opportunity to work on the shift following the time at which he applied. It takes about three hours for an employee to get the necessary papers, the assignment and physical examination, then he is ready to work.

The employment office is here to stay. More mills are adopting this system each year, and it will be to the advantage of all concerned if there is cooperation between the employment and the manufacturing divisions.

K. T. (*S. C.*)



First-aid cabinets should be located throughout mills for possible emergency use.

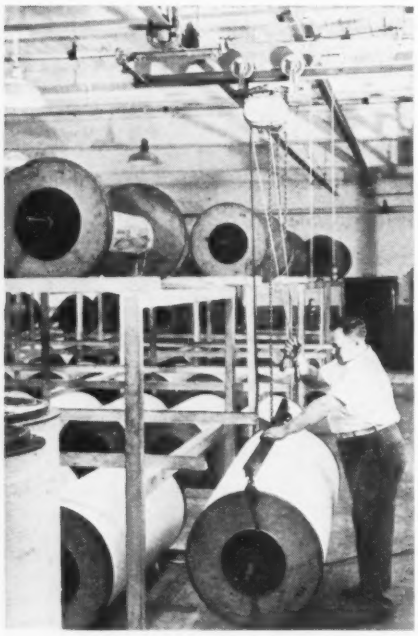
Overseers' Practical Helps

Beam Storage Racks

Savings in floor space and convenience in handling section beams at the back of the slasher is facilitated by a system of storing described in a recent issue of the *Cleveland Crane Graphic,* published by the Cleveland Crane and Engineering Co.

Beam racks are easily constructed of angle iron that are welded to form racks, as illustrated. Longitudinal angle iron forms the track in which rest the beam heads. Three tiers may be used, the lower one for the full beams and the two upper tiers for the storage of empty beams.

A transfer bridge operating on an overhead tramrail runs the full width of the storage rack. An overhead crane on the tramrail handles the beams which may be transferred to the slasher creels by moving the transfer bridge so it connects with the rails over the slasher creels.



Storage racks for beams made of angle iron.

First-Aid Cabinet

Mill officials should have constructed first-aid cabinets at locations throughout a mill where accidents most frequently occur.

Pepperell Mfg. Co. has such cabinets located throughout the mill. These can be constructed of plywood having the door hinged at the bottom so that it drops downward. Legs at the top support the door so as to form an emergency bed upon which the injured may be placed. Shelves inside the cabinet hold first-aid supplies such as iodine, salves, absorbent cotton, gauze, blankets, etc.

Breaking Card Room Bottlenecks

By better handling of production, labor, inspection, lubrication, and maintenance

PRESSURE OF WAR PRODUCTION has forced mills to turn out a poundage on Government and industrial textiles that was not thought possible before the war. On the whole, cotton textile mills have done an exceptionally good job of supplying these yarns and fabrics, often without too much consideration for the effect on the plants. Consequently, bottlenecks have developed that can floor the mill overseer unless he introduces effective measures to eliminate them. Changes in grade and staple of cotton, quality of yarn, shortages of new machinery and supplies, critical shortages in labor, around-the-clock operations, and added wear and tear have all taken their toll. Cards, particularly, have suffered from changing requirements and have often been forced into expensive overtime or third-shift operations to get the production to keep their other departments going.

Speeds and settings have frequently been changed to card longer staples at less pounds per hour. Carded yarn organizations have had their plants thrown out of balance where they go to heavier yarns to produce military fabrics. Combed yarn mills, although accustomed to handling long staples and fine numbers, often have had to spin large orders on counts finer than formerly.

Superintendents and overseers should study the tests run by Prof. G. H. Dunlap, for the Arkwrights and S. T. A., as reported in the April, 1942, issue of TEXTILE WORLD. These tests indicate that card waste, ends down in spinning and breaking strength and appearance of yarn varied little between normal and higher card cylinder speeds. Similar tests made by any mill on a section of carding and spinning equipment over a sufficient period of time, may indicate changes that can be made to increase production. However, there are practical limits to adjustments of speeds, settings and feeds; and when these limits are reached, the total hour

of operation must be increased to keep up with fly frames and spinning.

Experienced card room hands are scarce or not available at all. Long hours of operation have a tendency to irritate the worker and lower his efficiency on the job. Absenteeism and labor turnover have increased, especially on the third shift and after pay day. Training of new employees in the mill must be stepped up to relieve these conditions. Programs of training job instructors, qualified to train new employees on the job and in the mills, have been conducted by the Training Within Industry Division of the War Manpower Commission. Mills have reported in "New Employees Trained Quickly," of the December, 1942, issue of TEXTILE WORLD, that workers can be trained effectively to run cotton mill jobs in a fraction of the time required by old hit and miss methods.

One plant has kept a considerable number of learners training in each department and some of these are being used to run small assignments, when regular operators are absent. Women are being used to a greater extent on oiling, cleaning, sweeping, hauling roving, and running fly frames, where the men have been lost. The heavy work on the cards, such as laying up or piecing in laps, prohibits most women from handling such jobs. However, by breaking the jobs down and assigning the heavy work to the men still available, the women can probably do part of the work on cards.

LABOR SAVING DEVICES can be used to advantage in the card room. Superintendents may arrange to move such devices, from other departments not experiencing a bottleneck, and adapt them to card room use. Other devices can be improvised from non-strategic materials. If a lap truck is being used, the capacity can be increased or it can be equipped with ball-bearing casters to lighten the load on the hauler. Well-designed trucks can be used for hauling roving cans, speeding up the doffing of card cans, and to lighten the hauling loads.

Rearrangement of opener and picker room machines to make operations continuous without the use of doffing and loading labor has helped some mills. The pickers should be arranged so that the lap heads are close to the cards to eliminate as much hauling as possible. Space saved by rearrangement of machines can be used effectively for lap storage or preparation and conditioning of stock.

Maintenance of card room machinery has become an increased load on card grinders, fixers, and mechanics because of increased wear and shortages of supplies and repair parts. Also, an overseer is often forced to run a machine to get the badly needed production, even when he knows it should be overhauled. New parts, when available, take longer to secure and emergency repairs must be made to get a machine going. Parts that would have gone on the scrap heap a year ago are now patched up and made to do.

Metal spraying equipment can be used to rebuild worn or damaged parts. One mill has been using sprayed metal equipment for over a year, and has reported good results in building up worn shafts, rolls, and spindles.

Machinery builders have increased their output of Government equipment with a corresponding decrease in textile machinery and parts. This means that all supplies must be carefully conserved. Keep machinery in good repair, but do not be wasteful of repair parts. Machinery manufacturers can send their service men to a mill to make a complete maintenance inspection with recommendations. Such inspections can help prevent breakdowns. Overseers should check their maintenance and overhauling schedules to be certain they meet the demands of the present long operating periods. Responsibility for maintenance inspection can be placed on one person who can inspect and leave a tag on each machine showing what must be done to put it in good condition. The overseer can then look over the tags and stop the machines for overhauling, if practical. An effective system of inspection was described in the October, 1942, issue of TEXTILE WORLD.

Cleaning schedules must be made adequate to meet the present conditions. Practical cleaning and scouring schedules for cotton card room machines are given in the September, 1942, issue of TEXTILE WORLD. Efficient tie-in between inspection and scouring makes certain that machines are clean, and in good repair and adjustment. Daily routine cleaning by the operating personnel should be checked to be sure that it is adequate and that it is being done correctly. Waste pick-up can be placed on one man and it should be his responsi-

Memories of Old Man Carelessness—*By Martha Pittenger*

No. 2—JUST A BOTTLE

As I thumbed my record book many familiar names stared up at me. One, in particular, has brought back memories of the night, several years ago, when this young fellow gave me an invitation to come on his job, and have lunch with him. I shall call him Jimmy Thoughtless, for all the people who are thoughtless are great friends of mine.

Well, Jimmy was opening his box of lunch, and I urged him to get a bottle of a good cold soft drink, since he was sweaty, and tired. So he walked over to the lunch wagon and bought a bottle of pop and returned. Soon lunch was over, and his machine needed his attention, so I suggested that he just set the empty bottle down any old place. Why waste time with an empty bottle! Jimmy set it down just by the side of the loom, on the floor and got busy weaving. I began to rub my hands together in half pleasure, and half excitement, for I knew something was about to take place—something I dearly loved—an accident.

I looked down the alley, and there came Jimmy in a bit of a hurry. I always try to get my victims in a hurry, then I know they will get hurt, good and proper. Well, as Jimmy came down the alley, his foot hit the bottle, the bottle rolled under his foot, and he fell—my what a beautiful fall. He threw out his arm to catch, yeah, he caught, with the right hand, and mashed three fingers in the gears. A week later I heard he took blood-poison, and had to have all three removed. I chuckled over just what a little empty bottle could do, when I get ahold of a fellow.

bility to report excessive waste or improper separation. Waste boxes should be provided at the heads of drawing and fly frames.

Lubrication of card room machinery should receive added attention to prevent excessive wear of the machines. Lubricants, oiling assignments, and methods of application can probably be improved. Lubricating engineers can inspect the card room equipment and make suggestions for improvements in methods and lubricants. Provide a storage place for lubricants and keep all oils and greases in the proper containers to prevent waste in dispensing. Instruct oilers as to their exact responsibilities, and check behind them occasionally.

With our most difficult production year just ahead of us, overseers must hitch their belts another notch and expect to do more with much less. Overseers should develop capable subordinates that can keep up the maintenance and operating schedules, in order to devote more of their own time to eliminating bottlenecks. As long as mills must work under such pressure, bottlenecks will develop to a greater or less degree. Not until mills return to five- or six-day operation can overseers put their machinery in the best operating condition —and take Saturday or Sunday off!

Preparing Wool Blends

Suggestions for producing uniform results and reducing blending costs

By N. J. CROFTS

MIXTURES FOR WOOLEN YARNS range from blends of 100% virgin wool and wool combined with other animal fibers, such as camel hair or mohair which go to make the higher grade fabrics, to mixtures composed wholly of substitute fibers. Although the shorter clothing wools and fibers lend themselves more readily to the woolen system, where certain woolen fabrics with a hard worsted finish are desired, 100% long, coarse wools—or a combination of these and coarse substitute fibers—are used to produce a hard-twist yarn that resembles the worsted thread. Fine wools will stand more drafting in the spinning than the coarser wools, and, as a rule, will produce a more resilient yarn and fabric; however, the spinning qualities of vegetable fibers are not so great.

Where a variety of fibers of both animal and vegetable origin and of varying lengths and degrees of quality are combined in one mixture or blend, greater care must be used in the blending operation than in other branches of the textile industry where more uniform stocks are used. In order to insure a standard uniformity, all wool and other stocks should be blended separately before being combined to make a woolen mixture. Wools will vary somewhat from bale to bale, and re-worked wool stocks will show an even greater variation. To get the most even results, huge blends of many thousands of pounds should be made by opening the bales of stocks and piling them layer by layer in the warehouse.

Some of the defects of the finished fabric originate in blending, because if a mixture of colors is not evenly blended, there will be various shades in the cloth or it may have a mottled or cloudy appearance. Even on solid color blends, where two or more grades of stock are used to insure a finished fabric that will be even in texture and finish, the various fibers must be carefully blended. Likewise, the same care should be used on blends for piece dyes, as the different grades of wool stock differ in their affinity for the dye. If both animal and vegetable fibers are present, there will be an even greater variation in the ability of the different types of fibers to absorb the dye, resulting in a mottled appearance of with streaks in the cloth.

A woolen card will not rectify faulty blending. The operations of carding, spinning, warping, weaving, and finishing will be more uniform in performance and the yarn weights and breaking tests will be more even if the oiling and blending of the stock is as near perfection as possible. The batch method of preparing stock for the picker is commonly used and is perhaps the best.

Batches should be prepared with thin layers of the different colors and types of stock rather than with thick layers. Making the layers thin permits better mixing and higher production. When feeding the stock into the blending picker, the operator should take from top to bottom of the pile vertically and not horizontally. This method insures getting a fair proportion of each color and grade of stock in the blend.

BLENDING COSTS can be kept at a minimum where there is ample room to lay down a batch on one side of the picker and a hurricane type of overhead delivery places the stock in a neat pile on the opposite side. When the first run is completed, another batch can be immediately laid down, thus keeping the blending picker in continuous operation. Multiple-shift mills can have a batch laid down by the day crew immediately behind the picker feed, in addition to one at the side of the machine; and the second or third shift can run the picker, hence requiring fewer men on the second or third shifts. Where space is limited, use of movable partitions is sometimes advantageous.

In some mills the floor directly above the picker can be utilized for laying down batches and a permanent partition built that aligns with the center of the picker feed and runs lengthwise to it. With a large hole in the floor bisected by the partition, the stock can be fed down through a chute to the hopper of the picker feed from either side of this partition. In some instances where there is room, the batches can be laid down at the side of the picker and blown and deposited on the floor above to be fed down through a chute to the picker feed. Either of these systems permits continuous operation. Many mills can, by careful planning, rearrange the equipment already in place to obtain better use of floor space with the object of making the blending operation continuous.

Two runs on a Fearnaught type of picker is usually sufficient to blend a mix thoroughly if the stock is carefully laid down. If the mixtures are composed of many shades and colors, or with a great variety of different types of fibers that may need special handling, a third run may be necessary. The method of handling or storing the stock after blending varies with different mills, the most common being to blow the stock directly to storage bins behind the card feeds on the second or final run through the picker. A few mills bale the stock to conserve space and to hold the moisture in the stock. For convenience in handling, others use large canvas tarpaulins to haul the stock to the cards because of limited space in the card room. The writer does not recommend use of long blower pipes and storage bins behind the cards. The great length of piping fitted with individual gates for each bin is likely to cause a certain amount of mixed stock daily. Also, the stock bins shut off light and ventilation from one entire side of the card room. With enough space in the blending room or adjacent to that department, use of large rolling boxes with a capacity of 500 to 800 lb. of stock is perhaps the best method. On the final run of the blend these boxes are set under the overhead delivery pipe from the picker.

QUESTIONS & ANSWERS

Streaks in Mercerized Hosiery

Technical Editor:

Inclosed is a pair of stockings which shows in the body pronounced light streaks regarding which we would like to obtain your opinion. This stocking is made of mercerized yarns. The body is 50/2 mercerized and the welt 36/2 mercerized. It is noteworthy that all our difficulty is in the body and none of these streaks occur in the welt of this style.

We spin and skein mercerize our own yarns and, from the tendency of the streak to repeat itself at regular intervals, it appears to us this fault is mechanical in origin.

At the present time it is an important problem with us, as this style is running 30% seconds due to this difficulty. It is our thought that in your wide experience that you can be of some help to us with our problem. (8883)

Difficulty has been experienced in coloring mercerized goods because of variation in the degree of mercerization of the yarn. It is never safe to use yarn from two different lots in the body of a stocking. In ordinary practice 36/2 would not be mercerized with 50/2 and this may be why the 36/2 appears to be evenly mercerized, whereas the 50/2 does not.

The difference in color is more pronounced than we have seen where yarn from two lots was mixed; therefore, it may be that in processing prior to or in the knitting the 50/2 yarn absorbed some chemical which is causing the variation in color.

If you are unable to find the foreign matter which apparently is causing the trouble; we suggest that you have the laboratory made tests of a stocking in the gray.

Defect in Warp Knit Glove

Technical Editor:

We are producing on double warp knitting looms a fabric that is supposed to be run proof (lockknit). We are noticing that if one loop is cut, the stitches run along the needle. We are sending you enclosed a glove made from such a fabric, and we would be very glad if you could explain to us why this happens, and give us, if possible, your technical advice in order to prevent this. (8889)

There are four imperfections in this glove. One is a hole and the rest are needle runs which might have been caused by a broken thread or a broken needle. There is but one loop cut which would indicate that one needle was still working while the other needle had some sort of imperfection. The hole in the glove could be due to any one of several causes, and examination of the glove does not suggest the cause.

Problem in Carbonizing

Technical Editor:

In our mill we have a continuous piece carbonizing process which consists of immersion in sulphuric acid, squeezing, drying, and baking.

I have noticed that when the tank has been emptied and replenished with fresh acid by adding commercial sulphuric acid (98%) to water, carbonizing takes place with a lower concentration of acid than is the case after a period of say four months of carbonizing. Whereas we use a concentration of 7° Twaddell after replenishing the tank, it is necessary to use a concentration of 10° Twaddell at the end of four months. With the number of pieces carbonized, the concentration has to be gradually increased.

We drain the tank about every four months, and in the interim just top up daily with acid and water as required. Most of our pieces are white, therefore the acid does not become dirty.

Something is taking place in the tank, for in my daily titrations to test the acid I observe that after the acid tank has been replenished the change from transparency to pink is sudden and decided, whereas after a few months of carbonizing the change is less sudden and obscure. In fact, by the time we are about to drain the tank it is most difficult to know when to stop the titration, the change is so slow and goes through all shades of dirty pink. We test by taking 10 c.c. of acid from the tank and running in from a burette sufficient N/2 sodium hydroxide. The indicator is phenolphthalein.

In order further to help you, I might say that some of our pieces are carbonized in the grease and others after washing, and that in our blends there is a certain proportion of skin wool. Therefore, it is possible that lime, soap, and sodium carbonate enter our tank. But, seeing that we do not use the hydrometer for our tests, I cannot think that these additions will make any difference to my tests.

The only reason we empty our acid tank about every four months is the fact that a layer of slime approximately 1 ft. thick collects at the bottom of the tank and the sides of the tank above the liquid level become coated with a dense cover of long transparent needle-shaped crystals. The tank is made of lead. I am inclosing samples of the slime and the crystals.

Now, what I would like you to explain to me is this:

(a) Why have we to use a higher concentration of acid as the number of pieces carbonized increases? What is the chemistry of the phenomenon?
(b) What are the crystals?
(c) Why does the change in titration become less and less sudden and obscure as the number of pieces carbonized increases?
(d) What is the slime?

I trust that you will be able to help me in this matter and that I have given you sufficient details to enable you to reply to my queries. (8890)

The following reply was furnished by Werner von Bergen, director of research and control laboratories, Forstmann Woolen Co.

The samples of slime and crystals submitted were analyzed quantitatively and found to be of the following composition:

	Percent	
	Slime	Crystals
Moisture and Volatile Matter	6.7	16.2
Organic Matter	2.9	3.9
Sulphates	51.0	31.2
Phosphates	Trace	Trace
Calcium	18.7	21.1
Magnesium	2.6	2.3
Iron	1.4	Trace
Sodium & Potassium	16.6	25.1

From the conditions described in your inquiry and from the analysis of the samples submitted, in my opinion, the necessity for a higher concentration of acid in your carbonizing bath as the number of pieces treated increases, is attributable to the buffer action set up within the bath as a result of the large quantities of salts dissolved therein.

The formation of crystals and precipitated matter in the carbonizing bath is the result of a super-saturation of the solution with the individual salts within the system, leading to their subsequent precipitation or crystallization when the solution evaporates. The analysis of the sludge and crystalline material confirms the presence of the substances introduced in the carbonizing process; such as soda ash, soaps, calcium salts.

The buffer action, established in the presence of highly ionizable salts, will cause a repression of the hydrogen ions and the solution will thus resist changes in pH upon the addition of slight amounts of acid or base. Consequently, as the salt concentration is continually rising, the acid additions must be increased in order to maintain the desired absorbtion in the carbonized pieces. This buffer action would also serve to explain the difficulty encountered in discerning the titration endpoint after the acid tank had been in use for some time. This might be overcome by the use of methyl orange instead of the phenolphthalein as indicator, thereby obtaining a sharper endpoint.

LOOMFIXERS' MANUAL

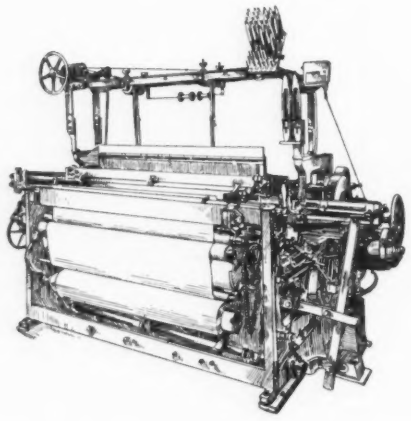
RAYON AND SILK SECTION—Chap. VII—Filling Stop Motion

By H. E. WENRICH

Sources of Filling Motion Trouble

LOOMS sometimes stop with the filling intact, and under such conditions the fork should be checked to see if it is in correct position. If the fork is down in the well when it should be raised, the connector rod may be broke or the shaft hub screw may be loose. The quickest way to fix each of these defects is to loosen the warp tension and pull the woven cloth forward to the breast beam with the pickwheel. Drop the high shafts or harnesses so the warp line is on the race plate. Slacken the warp so the fixer can reach through the loose warp to the defective part and remove or repair the connector rod. The loose screw that sometimes causes this defect can be tightened into the shaft hole. After adjusting the fork the warp can be set back to its correct position by the weaver.

When the loom stops but all motions appear to be timed correctly, a short dagger may be at fault. The dagger length varies between 3¼ in. to 3¾ in. on most looms. Try a slightly longer dagger. Keep the dagger perfectly straight, as a bent dagger will soon bend further, often breaking the shield. Again, the loom may be stopped because of a tight dagger coil spring. The spring may be of too great a tension and must be tensioned according to the filling yarn and warp count. If the warp count is heavy, forming a thick grid about the feeler wires and if the filling yarn is of a heavy count, the spring tension must be sufficiently strong to force the fork through the grid so as to stop the loom if there is a dragging tail on the quill. If the warp count is light and the filling yarn a very fine rayon of low denier count, the spring tension must be sufficiently light to avoid pulling the yarn through the warp when the filling is intact, but at the same time, it must be strong enough to work the fork freely. At times it is advisable to remove one or two feeler wires from the fork to quicken the action on fine filling yarn counts.



Looms equipped with a lifting rod in the center must be watched because of their tendency to cut cloth at the center where the rod bumps against the sand roll. Move the rod back and if it should fail to lift the fork, a further adjustment is required. On some looms it may be necessary to bend the rod slightly to avoid cutting the cloth. The rod can also be improved by cutting its top on a bevel and placing the high point in front position underneath the dagger lever so when the lay moves backward the high point gives a higher lift to the fork. On the forward movement the slope of the rod allows the dagger lever to be released earlier.

With some rayon weaves it is advisable to shorten the length of the feeler wires to prevent broken picks. But again, if the loom is automatic, full length wires may be required to avoid the loom stopping on the first pick. In fixing certain defective fork parts avoid causing other defects.

Chapter VIII Protection Motion

A SHUTTLE occasionally fails to enter its cell in the proper manner, or the loom bangs off because of some defective part breaking or slipping out of time. Protection motion then comes into play and protects the loom against a shuttle smash which may cause as high as a several thousand rayon ends to be broken out at the one time.

Protection is accomplished by placing a protector rod lengthwise of the lay, either in front or in the back of it. When this motion is set in action the protector daggers strike into a knock-off plate which in turn knocks off the braking mechanism, stopping the loom.

Whereas the protector rod has two rod springs which give better balance to the rod movement, many looms are equipped with but one spring. On the later type, place the single spring on one side and the rod stop on the opposite side. When the spring and stop are both placed at the center, it becomes necessary to reach under the cloth to make adjustments. Under these conditions it is nearly impossible to secure the exact degree of adjustment desired.

Good fixing of the protector motion demands that a fixer use his sense of touch and his sense of hearing. Rod springs are tensioned mainly by the sense of touch. The spring should have just sufficient tension applied by means of turning the spring collar on the rod to assure the rod being brought into proper position for bang-off when the shuttle is out of the shuttle box. If the spring tension is too great, the rod fingers will be pressed tightly against the shuttle box binders and necessitate excessive pick to drive the shuttles in and out of the boxes.

The rod must work freely in the rod stands. If it is bent the rod should be removed and straightened at once. If, on repairing a damaged rod the daggers bind slightly against the stands, the rod should be removed and ground at the point where it binds. The rod stop prevents the rod from swinging down too far on its movement, preventing the bounce caused by a back swing on the forward movement of the lay. If the rod should bounce it would cause the knock-off to fail. If the stop is loose or too far back, thus allowing the rod to bounce, there is also the chance of causing a smash-out should the loom bang-off but run forward slightly before the brake is applied.

FIXING HOSIERY MACHINES

FULL-FASHIONED MACHINES—Chapter XVIII (continued)—
The Narrowing Machine

By WALTER A. SIMOND

NARROWING COMBS must be set to centralize perfectly, by setting them with the points exactly over perfectly centralized needles on the first dip of the narrowing machine; or preferably centralized by the sinkers when the narrowing points are just barely above the sinkers, in the last rise of the narrowing machine. The latter method is best, because the curling of the selvages and contraction of the fabric usually causes the needles to be slightly flexed toward the center of the fabric.

In refitting combs, be sure to have a clearance not exceeding 0.002 in. between the combs and the narrowing bars for the support of the combs, as shown in Fig. F53 (T.W. Jan. '43), and to have the supporting arms on the front narrowing shaft, in the center of each head, just touching the lower narrowing rod to prevent any bending of the rod under narrowing pressure, thus causing angular misalignment of the points and loss of stitches. Improper bending of a thread carrier may cause it to contact a narrowing comb and prevent proper engagement of points and needles.

Quite often after a few combs have been readjusted laterally, it has been found that slight wear, over a considerable period of time, where the stop screw at the end of the narrowing rod contacts the narrowing nut, has allowed the rod to move outwardly a few thousandths of an inch. More frequent readjustment of these stop screws will avoid much of the moving of the combs, and keep all the narrowing points better centralized.

The slot in the back of the combs should never be filed wider after the combs have been carefully fitted to the narrowing rods. Combs that are hard to move should be taken off from the rods, and both the combs and the rods thoroughly cleaned with kerosene or gasoline. Never tap the lower end of a finger to move it on the rod, as it would spoil the fit on the rod and allow the finger to turn slightly when it is clamped to the rod and thus cause lateral misalignment with the needles. It is important that the clamps which hold the narrowing points in place be

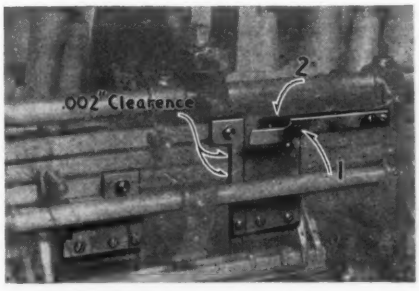


Fig. F53. Ratchet and rack controlling small combs on narrowing machine on footer.

fastened securely; but excess pressure with a screwdriver may bend a narrow finger, and too tight clamping sometimes forces the lower end of a narrow finger back so it will not narrow until it is straightened.

To remove a broken point butt which sticks in the hole, take the comb off and push the butt out from the back of the comb with a beardless needle which has been ground square just below the hook. When a new paper is put on a clamp, use paper of the right thickness; when replacing a clamp, be sure the sides of the clamp are perfectly flush with the brass comb, especially on the footer where the broad combs push the narrow ones.

NARROWING POINTS should be carefully pliered and perfectly straight before they are placed in the narrowing fingers or combs. The points are usually bent at just the right angle at the tips; but it is essential that each point tip be central. After the points are straightened, it is best to hold them by the butt, sight down the groove, and centralize the tip with the pliers if it is not central. Tips that are too straight will be likely to split stitches or fail to enter the eye of the needles. Points that are hooked from hitting a sinker, divider, knock-over bit or from improper pliering will prevent correct engagement with the needles, cause dropped stitches, and—in extreme cases—bend the needle beards or pull them off when the points are withdrawn, especially, when the stitches hold the needles and points in very close contact in fine or firm knitting. Care must be taken while pliering and spacing the points not to use pressure enough to close the side walls or to narrow the groove in the least, and the grooves must be kept free from dirt or any foreign substance which would prevent the needle beards from entering freely. Any trace of rust or roughness on the points or needles may cause menders.

PICOT AND MESH LACE POINTS are usually one gage larger so as to fill the space between the sinkers and knock-over bits and prevent the stitches from being pushed into the bits or pulled into the sinkers in the narrowing movements. These larger points cannot be used successfully except where they are spaced two or more grooves apart in the combs. For picot and lockstitch narrowing it is customary to use a small slack course, thereby avoiding flexing the needles in the cross over enough to cause dropped stitches and also, to maintain the full width of the fabric, in the narrowed course.

THE REGULAR NARROWINGS for diminishing the width of the fabric are most likely to have a dropped stitch in the narrowing mark because of the lateral flexing of the needles at that point, which is caused by the pull of the yarn at the two-needle cross-over. Therefore, it is important that the stitch length be right, and not too short; on the other hand, when the stitches are too long, some may be split from hooking up on adjacent needle beards or slip off from the points in the transfer. A floating needle-bar shaft may cause many menders. The facing collars should be kept close to the center bearings on the shaft. Proper conditioning of the yarn is essential for good narrowing. Narrowing can be safely accomplished at a speed of approximately 60 courses per min. on a correctly adjusted machine, but all machines which knit at a higher speed ought to be provided with a slow-down mechanism, which is set to slow down in the last Coulier stroke before a narrowing and held until after the stitches are transferred.

War Council at Memphis

The National Cotton Council holds the largest gathering of its career

REPRESENTATIVES of Department of Agriculture, U. S. Army Quartermaster Corps, WPB, OPA and other Government agencies met with members of the National Cotton Council, at Memphis, Tenn., Jan. 25 and 26, in a rapid-fire conference to further the war effort, and promote the interests of millions of King Cotton's loyal subjects.

Of particular interest to the textile industry was the discussion of the necessity of research and the adoption by the council of recommendations of the committee set up to study the problem. The recommendations included three items: First, that a Research Division be set up with a director making headquarters at Memphis. This division would include four sections as follows: (a) Production Research, (b) Industrial Investigation, (c) Chemical and Engineering Research, and (d) Cottonseed Research. Second, That the council sponsor a program to increase the scope of the spinning and testing services offered by the U. S. Dept of Agriculture to breeders, spinners, etc. under Congressional Bill S-4152. Third; that the council sponsor the expansion of the activities of the Ginning Laboratory at Stoneville, Miss.

These recommendations were adopted following a meeting of the Research Committee called by F. W. Symmes, general chairman, and discussions by D. F. J. Lynch, director, Southern Regional Research Laboratory, F. S. Blanchard, president, Textile Research Institute, Dr. Horace B. Brown, Jr., University of Miss., Dr. Simon Williams, director of research, National Cotton Council, and Dr. John Wright, U. S. Dept. of Agriculture.

Economic research was also discussed and the council announced that the services of Alston H. Garside had been procured to head up this part of the program. Mr. Garside is well known by reason of his prior connection with the N. Y. Cotton Exchange as economist and statistical research director.

ALSO OF INTEREST to textile manufacturers is the program of the Committee on Sales Promotion. Approximately 50% of the budget will be devoted to this effort. It will include a continuation of the basic long-range program of consumer education effectively launched the past year; a new campaign to be instituted about Mar. 1 which will make the wives and daughters of the Governors of the Cotton States the No. 1 salesmen of cotton dress goods and fabrics; and an intensive effort to tie in the uses of cotton with the all-out war program of the U. S. Government. Heading up this program is Ed Lipscomb, with an able corps of assistants.

William G. Werner, Procter & Gamble, Cincinnati, Ohio, appearing as a guest speaker, said the council's problem is "an advertising man's dream" since cotton is a product of universal want and need; is tied up with strong emotional appeals such as style, beauty, pride, attractiveness; is of interest to the reading and listening public; appeals to the retail stores; and the entire industry has the Government's support. The time is ripe, he said, for such a program as the Committee outlined.

Re-negotiation of contracts with the Army, Navy, Maritime Commission, and Treasury Department, was discussed in committee and a resolution submitted to, and adopted, by the council to the effect that Congress be urged to exempt the cotton-textile industry from the burden of needless and expensive re-negotiations.

Oscar Johnston, president, in his report of past and present activities of the council said that in our effort to bring about a lasting peace, "it is essential that we make willingly every human and economic sacrifice. No man, no group of men, no industry, no political subdivision of our nation must attempt to profit or to profiteer from our war effort. Human selfishness must be subordinated; individual and group aims and ambitions must be subordinated; individually and collectively we must make sacrifices, endure inconveniences and hardships; and these things we should do willingly, eagerly, and cheerfully."

To the 350 delegates and visitors present, representing the largest conference yet held by the council, he explained the necessity of holding this war-time conference and throughout the entire proceedings drove the program through with merciless speed.

The development of a future foreign market was discussed and plans outlined for work in this connection.

For the coming year the following officers were elected: President, Oscar Johnston, Scott, Miss.; vice-presidents, Robert R. Coker, Hartsville, S. C., Lamar Fleming, Jr., Houston, Tex., and Harold A. Young, North Little Rock, Ark.; treasurer, William T. Wynn, Greenville, Miss.; executive vice-president and secretary, William Rhea Blake, Memphis, Tenn.; general counsel, Lowell W. Taylor, Memphis, Tenn.

Serving on the Board as representatives of the Spinners (or manufacturing) Division are Hugh M. Comer, Sylacauga, Ala.; Norman E. Elsas, Atlanta, Ga.; Ernest Rees, Fayetteville, Tenn.; Fred W. Symmes, Greenville, S. C.; A. K. Winget, Albemarle, N. C.

President Oscar Johnston presents Miss Bonnie Beth Byler, the "Maid of Cotton" for 1943—

New Rayon Record in 1942

THE RAYON INDUSTRY in the U. S. excelled all previous production performances with a record output of 632,600,000 lb. (yarn and staple fiber) in 1942, according to the annual survey of the *Rayon Organon*, of which Stanley B. Hunt is editor. This output represents a 10% increase over the former record of 573,200,000 lb. established in the previous year. (See Table I.)

All branches of the industry contributed to this general advance. The production of rayon filament yarn, all processes, amounted to 479,300,000 lb., an increase of 6% above the 1941 level. This 1942 total comprised 310,500,000 lb. of viscose and cuprammonium yarn and 168,800,000 lb. of acetate yarn. Production of rayon staple fiber in 1942 reached the new level of 153,300,000 lb., an increase of 25% above the 1941 output.

RAYON CONSUMPTION: The 1942 domestic deliveries of rayon amounted to 620,600,000 lb., an increase of 5% over the previous 1941 record. This total figure is made up of 468,800,000 lb. of rayon filament yarn and 151,800,000 lb. of staple fiber. Deliveries of filament yarn were 4% above 1941.

The data in Table II show the consumption of rayon yarn by principal trades. The substantial increase in the consumption of rayon yarn by the hosiery industry was, of course, the result of the allocation of rayon to this industry to replace silk and Nylon.

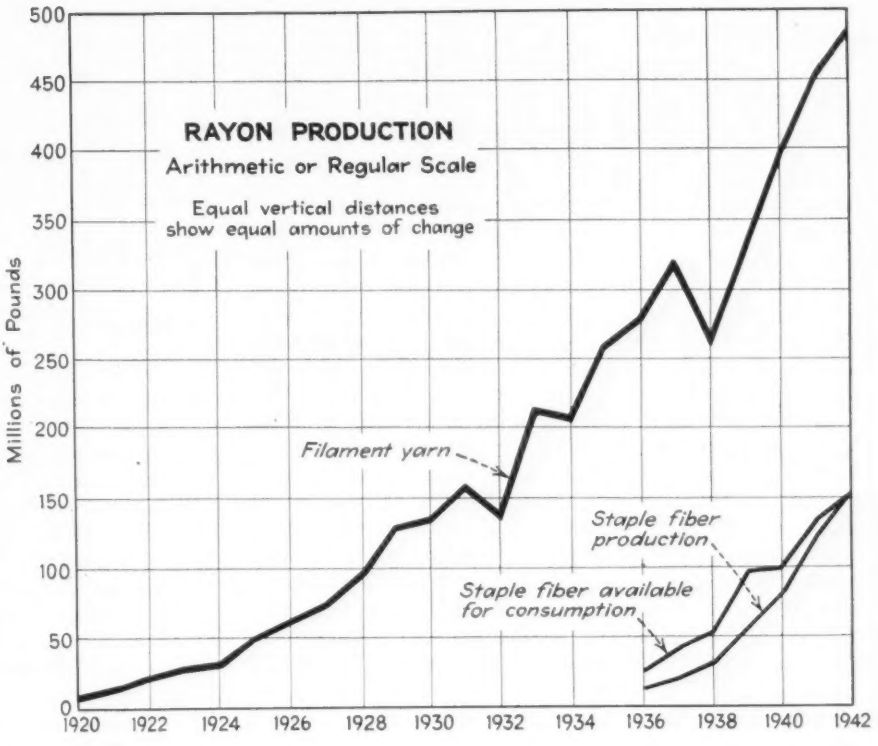


TABLE I. UNITED STATES RAYON PRODUCTION IN MILLIONS OF POUNDS

	1942	*1941*	*1940*	*1939*	*1938*	*1937*	*1936*
Rayon Filament Yarn.	479.3	451.2	390.1	328.6	257.6	321.7	277.6
Rayon Staple Fiber....	153.3	122.0	81.1	51.3	29.9	20.2	12.3
Total.....	623.6	573.2	471.2	379.9	287.5	341.9	289.9

TABLE II—DISTRIBUTION OF RAYON YARN BY TRADES 1925 TO 1942

(Millions of pounds and percent)

	Hosiery		*Other Knit*		*Broad Woven & Tires*		*Narrow Woven*		*Miscellaneous*		*Sub-total Knit*		*Sub-total Woven*		*Total Shipments*	
	lbs.	*%*	*lbs.*	*%*	*lbs.*	*%*	*lbs.*	*%*	*lbs.*	*%*	*lbs.*	*%*	*lbs.*	*%*	*lbs.*	*%*
1925.....	10.7	*20*	10.5	*20*	26.1	*50*	2.9	*5*	2.6	*5*	21.2	*40*	29.0	*55*	52.8	*100*
1926.....	10.3	*20*	15.0	*29*	21.2	*42*	2.2	*4*	2.6	*5*	25.3	*49*	23.4	*46*	51.3	*100*
1927.....	16.7	*20*	28.9	*34*	31.5	*37*	3.3	*4*	4.6	*5*	45.6	*54*	34.8	*41*	85.0	*100*
1928.....	14.7	*17*	32.9	*37*	32.5	*37*	3.2	*4*	4.7	*5*	47.6	*54*	35.7	*41*	88.0	*100*
1929.....	18.8	*16*	43.7	*37*	45.4	*39*	3.1	*3*	5.4	*5*	62.5	*53*	48.5	*42*	116.4	*100*
1930.....	16.5	*15*	38.0	*34*	49.5	*44*	3.0	*3*	4.6	*4*	54.5	*49*	52.5	*47*	111.6	*100*
1931.....	21.1	*14*	48.7	*31*	75.6	*49*	4.0	*2*	6.2	*4*	69.8	*45*	79.6	*51*	155.6	*100*
1932.....	19.0	*13*	38.0	*25*	84.6	*56*	3.9	*2*	6.3	*4*	57.0	*38*	88.5	*58*	151.8	*100*
1933.....	17.0	*8*	41.3	*20*	141.3	*67*	5.5	*2*	5.9	*3*	58.3	*28*	146.8	*69*	210.9	*100*
1934.....	14.1	*7*	39.9	*21*	131.3	*68*	4.8	*2*	4.6	*2*	54.0	*28*	136.1	*70*	194.7	*100*
1935.....	14.7	*6*	47.9	*19*	179.5	*71*	5.2	*2*	5.4	*2*	62.6	*25*	184.7	*73*	252.7	*100*
1936.....	16.3	*5*	51.0	*17*	217.0	*73*	8.2	*3*	4.9	*2*	67.3	*22*	225.2	*76*	297.3	*100*
1937.....	12.6	*5*	38.9	*15*	202.5	*76*	7.4	*3*	4.8	*2*	51.5	*19*	209.9	*79*	266.2	*100*
1938.....	14.1	*5*	39.6	*14*	209.3	*76*	6.7	*2*	4.1	*1*	53.7	*20*	216.0	*79*	273.8	*100*
1939.....	16.2	*4*	49.9	*14*	278.6	*77*	9.1	*3*	5.8	*2*	66.1	*18*	287.7	*80*	359.6	*100*
1940.....	16.4	*4*	54.0	*14*	304.4	*78*	8.2	*2*	5.7	*2*	70.4	*18*	312.6	*80*	388.7	*100*
1941.....	26.3	*6*	57.9	*13*	349.2	*77*	10.2	*2*	8.8	*2*	84.2	*19*	359.4	*79*	452.4	*100*
1942.....	49.3	*11*	56.3	*12*	343.6	*73*	8.7	*2*	10.9	*2*	105.6	*23*	352.3	*75*	468.8	*100*

NEWS OF THE MONTH

Urges Expanded Textile Output

A wire was sent by Frank L. Walton of WPB on Feb. 1 to every major cotton mill in the country (519 mills were covered), in which he urgently requested them to increase production of yarns and fabrics to the maximum levels. Mr. Walton explained that, while military requirements have first call on the textile output, essential civilian needs are of equal importance where they are necessary in maintenance of health and morale. Mr. Walton later stated that the industry had responded encouragingly.

At the same time meetings were being held in Washington which resulted in a tentative plan sponsored by the Wool Branch of WPB to increase production of the wool industry. This plan involves reduction in number of styles and patterns, production of heavier yarn counts than formerly, and weaving of fabrics (utilizing these heavier yarns) having fewer picks and ends than formerly. It is likely that wool quotas given to mills beginning with the May-to-July period will be doubled, that is for worsted 30% unrestricted and 40% restricted; for woolen 5% unrestricted and 25% restricted.

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Better Priority Rating Given Textile Repair Parts

The War Production Board on Feb. 3 issued an order permitting use of an AA-2X rating by the textile, clothing and leather industries for the procurement of maintenance, repair, and operating supplies. The order, P-139, covers all supplies necessary to maintain machinery and plants in sound working condition and to restore machinery rendered unfit by wear and tear. The order does not cover material to be incorporated physically into any textile product or any material for expanding or rebuilding equipment or plant. The order will be administered in the Textile, Clothing and Leather Division of WPB by the Textile Machinery Branch of which Robert Dempsey is chief.

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Ray Bell Quotes Praise of Industry

At the recent annual meeting of the Association of Cotton Textile Merchants of New York, W. Ray Bell, president, summarized the cooperation of the industry with various Government agencies and reported the high praise which had been given the industry by various Government officials. In this connection he quoted Quartermaster General E. B. Gregory of the Army, and Rear Admiral Young of the Navy Supply Corps. Mr. Bell pointed out that production of combed twill was now ten times greater than in 1939 and that cotton duck production was five times greater. He stressed the close supervision on prices exercised by the Government bureaus and said "No wonder the industry as a whole is disturbed over the proposed wholesale application of the renegotiation statute to its Government business."

New directors elected include Floyd W. Jefferson, Sr., Dennis L. Reardon, John K. Whitaker, Frederick A. Williams and G. E. Huggins.

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National Conference Forums on Cotton

A series of National Conference-Forum dinners were inaugurated by the New York Cotton Exchange on Jan. 29, at the Biltmore Hotel in New York. These forums bring together representatives of cotton growers, cotton merchants and shippers, textile manufacturers, brokers, economists and Government officials in discussing problems of the entire cotton-textile industry.

Guest speakers at this first meeting were Grover A. Hill, assistant secretary of Agriculture, Herman Cone, president of American Cotton Manufacturers Association, and J. N. Lipscomb, economist and field director of Mississippi Farm Bureau Federation. R. J. Murray, president of the exchange, presided.

A study of the role played by cotton in this global war, said Mr. Cone, reveals that it is second only to steel as the most vital war material. In summing up the equipment situation he said the industry could get along fairly well for a time without new machinery if repair parts continue to be freely available. Comparing 1942 with 1939 he said that the industry last year spun 55% more cotton on 8% less equipment.

At the March meeting of the Forum representatives of the Army will constitute the major panel and present a graphic description of the demands placed upon cotton by the armed forces. It will be held at Biltmore Hotel, New York, on Mar. 8 at 5:30 p.m. Cotton manufacturers and selling agents interested in attending this meeting are invited to get in touch with the trade committee of the New York Cotton Exchange.

NOTICE TO SUBSCRIBERS

Readers of TEXTILE WORLD will observe that the "trim size" of the current issue of the magazine is slightly smaller than that of previous numbers. The reduction in size has been made to enable the publishers to meet an order of the War Production Board limiting the amount of paper that may be used in 1943. Subscribers will note, however, that no change has been made in size of type or in the amount of editorial content per page, but that a substantial saving in paper has been effected merely by trimming the margins. The publishers have adopted the new size as a war measure and as a contribution to the conservation of manpower and transportation facilities in the production and distribution of paper. Service to the reader has not been sacrificed and will be maintained as far as humanly possible in the face of the problems confronting all of us in our united efforts to win the war.

THE 48-HOUR WEEK

The imposition of the 48-hour week, announced by the President Feb. 9, was good news in that it recognized officially the folly of trying to fight this war with a 40-hour week. It was bad news, however, in that it did not go further and recognize the inflationary threat which continued payment of time-and-a-half for overtime over 40 hours carries. The war bill is increased; more money is put into circulation competing for fewer things available. In the same address in which Justice Byrnes declared war on "creeping inflation," he announced this overtime policy which represents inflation moving at a much faster pace than a creep. It is to be hoped this will be corrected by a supplementary order, and that the 48-hour week, with time-and-a-half for overtime over 48 hours, be established for the duration.—*Editor.*

Finishers Association Holds Annual Meeting

Over 450 million yards of vat-dyed goods, including uniform twills, herring-bone twills, poplins, shelter tent duck; 75 million yds of mosquito netting; 65 million yards of Sanforized gray goods—these are estimated quantities of some types of cotton goods which the finishing industry will be expected to turn out during the next six months, according to George H. Lanier, Jr., chief of dye and finishing division, WPB, at the annual meeting of the National Association of Finishers of Textile Fabrics held last month. Other speakers at the meeting were C. J. Quinn, of OPA, who discussed price regulations; and W. Ralph MacIntyre, of Joseph Bancroft & Sons Co. and president of the finishers' association, who reviewed the war effort of the finishing industry. At the business session, Mr. MacIntyre was re-elected president; Richard W. Arrington, of Union Bleachery; and L. H. Ballou, of Slatersville Finishing Co., were elected vice-presidents; Miss Alice C. Moore continues as secretary-treasurer.

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Growers Push Plans for Government to Buy Clips

Following the annual convention of the National Wool Growers Association in Salt Lake City on Jan. 25 and 26, it was understood that further political efforts are under foot to get the Government to purchase domestic wool clip. It is understood that the Department of Agriculture has worked out a plan and that a public hearing is likely to be called before this issue reaches its readers. The special wool committee which in the last Congress was headed by Senator Schwartz of Wyoming, who was not re-elected, is being continued in the present Congress—probably under the chairmanship of Senator Hatch of New Mexico. A. P. Emery, president of the Boston Wool Trade Association, who attended the wool growers convention, opposed the purchase of the 1943 clip but agreed that some protection should be offered against possible damage to the market by the dumping of a wool surplus after the war. Also in Congress is a proposal to probe the marketing of wool, cotton and other farm products with a view to setting up more up-to-date and efficient marketing and distribution systems. C. B. Wardlaw, of Del Rio, Texas, in his address as president of the National Wool Growers Association, deplored the Government emphasis on shortage of wool for civilian use since the domestic clip plus the stockpile

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In response to a popular demand Devopake is now available in seven practical colors.

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of wool gives this country the largest supply of wool it has ever had available. Mr. Wardlaw opposed renewal of Presidential powers to negotiate for reciprocal trading by changing tariff on imports and exports. The growers opposed any plan for compulsory blending of wool in fabrics.

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Some Yarns Frozen for Higher Ratings

In mid-February it was understood that WPB was about to freeze certain cotton yarns to bar their sale on A-2 or lower priority ratings. Included would be (1) carded yarns of 20s or coarser spun on 2⅛-inch or larger rings; (2) 85% combed yarn of 20s or coarser; (3) 65% combed 21s to 40s; (4) 55% combed 41s and finer.

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Wholesalers Told Civilian Cloth Cut Not Over 10%

At the recent annual convention of the Wholesale Dry Goods Institute in New York, Frank L. Walton, director of the Textile, Clothing and Leather Division of WPB told his audience that the available supply of textiles for civilians in 1943 should not fall more than 10% below the amount available in 1942. He stated that there was no all-over shortage of textile fibers but that our production is limited by our processing capacity. In reviewing the 1942 situation Mr. Walton estimated that military needs, Lend-Lease, etc., took 4,656,000,000 linear yards, but left a total of 8,876,000,000 yards for the civilian needs.

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U. S. Weaves Uniform Cloth in Australia

Information current in Washington is to the effect that the American Army has taken over a woolen mill in Australia and is now turning out fabrics to clothe the American soldiers in the South Pacific areas. This mill obviously makes use of wool which is available in large quantities in Australia, and, by the manufacture of uniform cloth on the spot, effects a saving in cargoes bound from the United States for the Southern Pacific area.

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High-Strength Cotton Yarn For Parachute Harnesses

Development of a new type of cotton yarn suitable for use in making parachute harnesses has been announced by H. Gordon Smith, general manager of the Textile Division of United States Rubber Co. This yarn, which is called Ustex, is produced by a combination chemical process and mechanical treatment. One of the advantages of this yarn is that it does not require long staple cotton.

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Dye Sales Restricted Sharply

Sales of organic dyes and pigments for civilian use are sharply restricted according to Amendment to WPB Order M-103 issued Jan. 22. According to this amendment which is retroactive to Jan. 1, sales and deliveries for civilian purposes of all organic dyes and pigments for any

Putting the Big Roar in the Navy's Guns

Are powder bags important?

You can take the word of America's fighting bluejackets—"well-filled powder bags put the mighty roar in Navy's big guns."

Powder bags were on the priorities critical list long before Pearl Harbor. In the newest and finest powder bag plants, mass production methods are turning out the tremendous quantities of bags essential in the war effort.

Here you can see the results of Butterworth "know how" in the most modern wet finishing equipment—Padders, Dryers and Compartment Washers.

Butterworth Machines have an important role to play in the production of every textile necessity The cooperation of Butterworth Engineers is freely offered to every mill seeking increased output on war contracts.

If you have a problem in the wet end of textile finishing—bottleneck, production slowdown, worn-out equipment—we will do our best to help you.

Let Butterworth experience serve you now.

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***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

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SPEEDS UP PRODUCTION

Pioneers in gas infra-red drying for Tenter Frames, Palmers, Singers and Slashers. Infra-Red waves assure deeper penetration and speedier drying. Flexible temperature control at any zone. Cost of operation and maintenance lower than with present methods.

At New Braunfels Textile Mills the following results were obtained:—

"The Carbomatic equipment is economical to use and is very fast. We were formerly operating our tenter three shifts, 168 hours per week. We are now operating this tenter two-ten hour shifts four days per week (80 hours) and putting through the same 300,000 yards per week—To show you what we think of the Carbomatic Generators we have bought additional installations for two Slashers."

To get a clear understanding of Carbomatic Drying Facts as they apply to your specific processes send us detailed information or request a call from one of our field engineers—no obligation. Copy of our descriptive bulletin T8 sent on request.

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EXHIBIT IN THE CELANESE CORP'S SHOWROOM, showing manufacturers' products of Celanese fabrics available to men and women in the services.

one quarter of the year 1943 are limited to 15% of sales and deliveries in 1941. Further, anthraquinone vat dyes appearing on list A of the original order cannot be sold for civilian purposes. The industry believes that this amendment will result in a limitation of number of shades on dyed textiles and that shades will not be so bright or dark as in the past. Printed fabrics will contain a higher percentage of white space and fewer bright-colored prints will be available.

Latest "E" Awards

The following firms have been awarded the Army-Navy "E" since publication of the last previous list in the January issue of TEXTILE WORLD:

Bamberger-Reinthal Co., Cleveland, Ohio; Blueridge Co., Glasgow, Va.; Gonic Mfg. Co., Rochester, N. H.; Cocheco Woolen Mfg. Co., Rochester, N. H.; Equinox Mills, Anderson, S. C.; Lebanon Woolen Mill, Lebanon, Tenn.; Convenience, Inc., Greenville, S. C.; Lincoln Bleachery & Dye Works, Lonsdale, R. I.; Portland Woolen Mills, Portland, Ore.; Wauregan-Quinebaug Mills, Wauregan, Conn.; Pacolet Mfg. Co., Mill No. 4, New Holland, Ga.; Broad Brook Co., Broad Brook, Conn.; Martin Dyeing & Finishing Co., Bridgeton, N. J.; Ripon Knitting Works, Ripon, Wis.; Putnam Woolen Corp., Putnam, Conn.; Bethlehem Silk Co., Bethlehem, Pa.; Bridgeport Fabrics, Inc., Bridgeport, Conn.; Ware Shoals Mfg. Co., Ware Shoals, S. C.; Rockriver Woolen Mills, Janesville, Wis.; A. D. Ellis Mills, Monson, Mass.; Felters Co., Millbury, Mass.; Elliott Knitting Mill, No. 2, East Catawba, N. C.; Fidelity Machine Co., Philadelphia, Pa.; Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J.; Dow Chemical Co., Midland, Mich.; Sylvania Industrial Corp., Fredericksburg, Va.; General Asbestos & Rubber Div., Raybestos-Manhattan, Inc., North Charleston, S. C.; Rohm & Haas Co., Bristol, Pa.; E. I. du Pont de Nemours & Co., Dye Works, Deepwater Pt., N. J.; Wannamaker Chemical Co., Orangeburg, S. C.; Allied Chemical & Dye Corp., Barrett Div., Frankford, Pa.; Hercules Powder Co., Kenvil, N. J. and Parlin, N. J.; Merk & Co., Rahway, N. J.; Mathieson Alkali Works, Niagara Falls, N. Y.

Price Formula for Throwsters

A formula by means of which throwsters can determine prices for lubricating rayon hosiery yarns was announced

At Last—An Ideal Plasticizer!

• A statement of tremendous interest to everyone concerned with warp sizing.

MANY OF THE NUMEROUS chemical substances widely used today in textile processing fall far short of performing their functions as perfectly or as completely as might be desired. However, their inefficiency must be tolerated until improved products are developed.

Years ago, we at Quaker Chemical Products Corporation realized the need for these improved products and determined to tackle the job of developing them. We felt that a greater knowledge of the fundamental causes of known results in certain processes might reveal entirely new approaches to the problems involved. And so, in our superbly equipped research laboratories a picked staff of process engineers and textile chemists went to work.

Problems of Plasticizing Starch

One of the subjects to which we devoted a great deal of study was the development of a much better *plasticizer for starch* wherever it is used in the textile industry. One of the most important applications is in the size of cotton warps where tallow—or proprietary size compounds containing mineral substitutes—are commonly employed.

As is generally known, when tallow is used in the proportion of one part to 10 parts of starch, without a plasticizer, the warp is too brittle and chafing occurs. But, when the percentage of tallow is increased, the warp becomes too soft and fuzz balls form on the loom, breaking the warp yarn.

Obviously, then, what is needed is something to *assist* the tallow in plasticizing the starch—a function which neither tallow alone, nor a sizing compound, performs perfectly.

Sizing compounds that are not straight tallow usually contain mineral oils, waxes or calcium chloride and depend on these ingredients to compensate for the deficiencies experienced when no real plasticizer is used. However, these substitutes, or adulterants, are sometimes difficult to *desize* properly, often cause discoloration in the warp and prevent a good bleach. In singeing broadcloth, shirtings, white goods and similar materials before desizing, the heat of the singeing machines causes calcium chloride to yellow the goods. This does not bleach out and, therefore, prevents a perfect white.

Ordinary Size Assistants Fail to Promote Penetration

Other materials such as various gums, paraffine oils, beeswax, gum tragasol and locust bean gum are used to strengthen the combination of tallow, starch and water. In our research we naturally experimented with these substances. However, we found one difficulty common to them all: they simply lay on the outside of the warp yarn and do not assist the *penetration* of the size into the yarn—which is an essential consideration. The use of gums, it appeared, merely made the size thicker, so that fewer yards could be sized with the same quantity . . . and accordingly increased the cost of the size.

New Type Plasticizer Developed

Thus it became evident early in our studies of the problem that its solution called for the development of an entirely *new type* of product. And that is exactly what we are now ready to offer to textile cotton weavers.

This new product seems to fill all the requirements of a perfect plasticizer. When used to replace approximately half of the tallow or tallow sizing compound, it promotes more complete plasticization of the starch and more thorough penetration of the size into the yarn . . . thus imparting more strength to the yarn than any other method known to us. Since its acts as a penetrant, it desizes perfectly . . . helps to wet out . . . and assists in the boil off.

More Detailed Information Available

In actual use in prominent textile mills, this new Quaker Chemical product is proving itself outstanding . . . making possible much greater takeup and, at the same time, considerably increased yardage from a tank of warp size.

If you are interested in obtaining more detailed information about this and other new type Quaker products for the Textile Industry, we shall be pleased to send you specific data. Or should you be interested in learning just how these new products may help you increase your production, a Quaker Process Engineer will gladly drop in and discuss the matter with you.

Quaker Process Engineers are trained technical men with years of experience in the textile field. They talk your language and know how to translate our new developments into improved production. Why not write today for one to call?

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Synthetic Detergent

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The Ultimate in Stability against

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Fine Chemicals for the Textile Industry
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We invite your attention to our other products for the textile industry:

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last month by OPA in an amendment to MPR168. According to this amendment, the selling price for special lubricating treatment shall be the sum of certain elements of cost of the treatment to the throwsters plus 40% of this cost if a volatile solvent is used and 30% if a non-volatile solvent is used. In no event must the maximum price exceed 40¢ per pound.

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Textiles Asked for Fighting French Relief

The Washington Chapter of the Fighting French Relief Committee, 1710 Connecticut Ave., Washington, D. C., has sent out an earnest appeal to textile companies for remnants, seconds, samples, and all unsalable lengths of textiles. Such cloths are turned into money with which to buy life-saving equipment so badly needed by the Fighting French. This is accomplished as follows: French ladies in this country make the exquisite lingerie, garments, robes, etc., for which France has always been noted, and these in turn are sold to supply money for the purchase of ambulances, medicines, and other necessities, including hospitals.

The committee states that absolutely any kind of textiles is more than welcome—any weave, color, or design—nothing too coarse or too fine.

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Cotton Used in Oil Shipments

Cotton will play an important role in speeding oil shipments to the eastern coast if current plans of Office of Defense Transportation to convert 100 steel box cars into petroleum carriers are extended. According to Cotton-Textile Institute, 50 of these cars will be equipped with Mareng cells. These units are to be made of 9 oz. cotton duck, 280 yd. of which will be required in the installation in each car. The cells are completely covered and once installed remain rigidly in place.

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Merrimack Wins Alabama Safety Contest for 1942

Merrimack Mfg. Co., Huntsville, Ala., finished first among textile mills operating in the spinning and weaving classifications according to Frank R. Broadway, State director of industrial relations, in listing winners of the 1942 textile safety contest. In the 12-months competition during which 2,149,600 man hours were worked by employes of the Merrimack company, only two lost-time accidents occurred, establishing an accident frequency of 0.93. Boaz (Ala.) Mills was first among those in the spinning classification, with three lost-time accidents in 1942 during which 591,700 man hours were worked setting up an accident frequency of 5.07. The Russell Mfg Co., Alexander City, had three lost time injuries, 2,683,921 man hours and a frequency rate of 1.12, making it second in the spinning and weaving class, while the Avondale Mills had 22 lost-time injuries and a frequency rate of 1.74 in 12,627 804½ man hours. Adelaide Mills of Anniston, winner of the state-wide contest in the spinning classification in 1941, was runner up in 1942 with three lost time injuries and a frequency rate of 5.15 in 582,622 man hours.

BIG-HUSKY-ACCURATE *is not enough!*

You've got to consider the "X" factor, too!

Sure, we make scales big, husky, and accurate. You've got a right to expect *that* from *any* good scale. But we at Fairbanks-Morse build something else into our weighing machines. We consider in the *design* of our scales—*the* "X" *factor!*

The "X" factor is composed of those things which cause inaccurate weighing, *not by the scale,* but by the men who use scales. In other words, the "X" factor in weighing is the *human* liability of inaccuracy.

Having designed and manufactured weighing equipment longer than anybody else in the world, it is only natural that we should know more about the causes of inaccuracy due to the "X" factor.

Consequently, you will find in our scales many little features, such as a pointer which rides *close* to the dial to avoid parallax, and numerals that have been selected for greatest readability. And if you want to completely eliminate the "X" factor, we'll provide a ticket printer which prints an indelible record, automatically.

If you have a weighing problem, or want to speed up your weighing operations, come where there is more experience. Ask Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago.

Fairbanks-Morse Scale Engineers, because they are industrial specialists, can be of greatest service in fitting weighing machinery into your production flow. For weighing while in motion, secrecy in weighing, or automatic operation, ask for their counsel.

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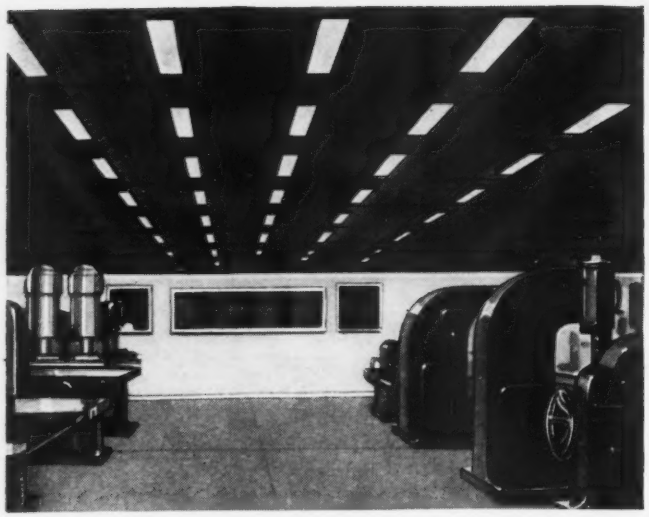

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Controlled starting means the starter lights the lamp at the precisely right moment—not before, not after. This cuts to a minimum the amount of emission material used. And it is the excessive use of this material that shortens lamp life.

"MASTER NO BLINK" STARTER

Here's the starter that's recognized as 1942's outstanding contribution to better fluorescent lighting.

It is a manual reset starter that completely eliminates blinking and flickering, and saves you power, maintenance time and war vital materials.

This new G-E Starter instantly cuts out a dead lamp from the circuit. No current is used to keep the lamp locked out. No current is wasted trying to restart the dead lamp. No wasteful wear and tear is placed on the starter and ballast —all of which means a saving in current and vital materials.

THE WHOLE STORY'S IN THIS FOLDER

The full line of G-E Accessories and their proper use for best fluorescent lighting may be had by writing to General Electric Co., Section G232-109, Appliance and Merchandise, Dept., Bridgeport, Conn.

GENERAL ELECTRIC

This and That

A revised method for the analysis and reporting of fiber composition of textile products has been issued by the National Bureau of Standards. This method is designated as Commercial Standard CS65-43.

Greatly increased consumption of paper yarns by the carpet industry since use of jute was restricted by WPB is reported. Current consumption of these yarns is estimated to be about 750,000 lb. monthly.

Alexander Smith & Sons Carpet Co. will sell direct to the retail trade beginning Jan. 1, 1944.

Gotham Hosiery Co. is offering a rayon tow stocking to take place of fine lisles in sportswear.

Judson Mill, Greenville, S. C., has deeded its school building and community building to the Parker School District as an outright gift.

Restrictions on use and sale of textile printing rollers containing copper or copper base alloys were issued on Jan. 22 by WPB under General Conservation Order M-280. According to this order, on or before Feb. 15 every person engaged in roller printing of textile fabrics shall set aside a number of print rollers containing a total poundage of copper and/or copper base alloys equivalent to the total poundage of copper and copper base alloys contained in print rollers in his possession throughout the period beginning Sept. 1, 1941 and ending Jan. 21, 1943 and not used by him during that period.

Under order M-37-d, WPB on Jan. 27 placed all high-tenacity viscose rayon yarn of 250 or coarser denier under direct allocation effective March 1.

High tenacity rayon yarn for tires produced by Industrial Rayon Corp. continuous process machines will be labeled Tyron. The company's parent plant is being converted for the production of this yarn to be used in tires for aircraft, motorized artillery and army transport vehicles.

American Viscose Corp. has commenced a series of advertisements to show by means of actual case histories how the company's "Crown" Tested Plan operates to produce serviceable scientifically tested rayon fabrics.

An intensive course in textile technology is being given by the Philadelphia Textile Institute for civilian employees in the United States Army Quartermaster Depot in Philadelphia. Started Jan. 4, the course will run for 12 weeks.

A purchase program designed to insure adequate supplies of both American-grown and Puerto Rican Sea Island cotton, has been instituted by the Department of Agriculture. Purchases will be made by the Commodity Credit Corp. at prices from 48 to 59c per lb.

Minimum requirements for stability of women's woven rayon handkerchief fabrics have been set up by the American Viscose Corp. under its "Crown" Tested Plan.

To increase the value of the "Crown" Tested Plan to the consuming public and to various trade factors participating in the plan, the American Viscose Corp. has formed a "Crown" Tested Advisory Group comprising independent textile authorities and members of the company who are actively connected with the carrying out of the "Crown" Tested Plan.

The ban on the use of woolens for men's women's and children's bathrobes and other types of lounging wear was

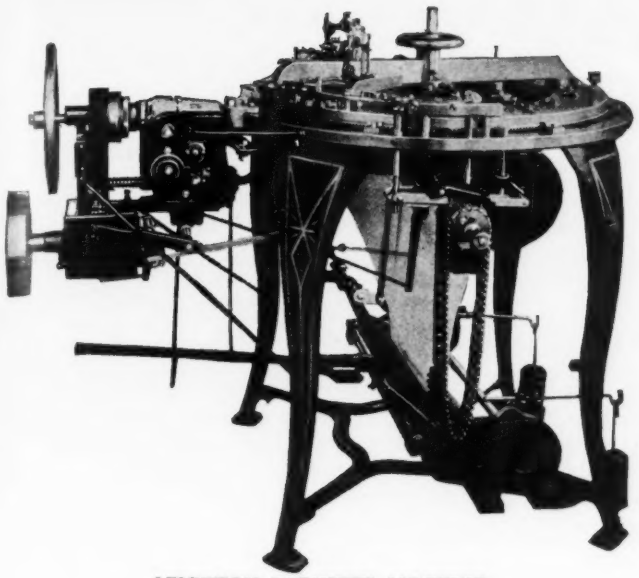
TEXTILE CALENDAR

Committee D-13, American Society for Testing Materials, Spring meeting, Park Central Hotel, New York, Mar. 10 to 12, 1943.

Greater New York Safety Council, Pennsylvania Hotel, New York, Mar. 23 to 25, 1943.

National Cotton Week, May 17 to 22, 1943.

Swim-for-Health Week, June 21 to 28, 1943.



LEIGHTON TRANSFER MACHINE

Continuous Production Requires Continuous Care

1. Use a high grade oil—and arrange a regular oiling schedule.

2. A few drops on the right spot and at the right time will do more good than occasional over doses.

3. Keep the machine clean. Don't wait until it is too late.

4. Excessive speed will cause delays requiring mechanical repair and replacement of valuable parts.

5. The time of your fixers and our service men can be saved by following standard instructions for operating your machines.

6. Government fabrics are keeping most models of Leighton Knitting Machines in continuous production so give them the care they deserve. Be patriotic and save the wear and tear on all moving parts.

Established 1873 Incorporated 1894

LEIGHTON

MACHINE COMPANY

Manchester, New Hampshire

removed on Jan. 20 by amendments to WPB orders L-130 and L-118. Only woolens containing not more than 65% new wool content may be employed for these garments. The rest of the fabric must be of other material, such as reworked or reprocessed wool, noils, cotton or rayon.

Bigelow-Sanford Carpet Co., with 75% of its equipment converted to war work is introducing a sales control program that will limit the purchases of each customer to 30% of his average quarterly billings in 1941.

Civilian Goods Harder to Get

Cotton goods manufacture continues at a high rate, but poundage of yarn and yardage of cloth available for civilian use seems to be dwindling. Spinners are dissatisfied with the margin available to them and since they are well sold ahead they have been unwilling to take on new business. New purchases of Lend-Lease cottons totalling over a quarter of a billion yards were said to be on the way at the end of last month. However, some print cloths and sheetings were available for nearby deliveries but the lots were small. Sellers naturally give preference to orders with the higher priority ratings.

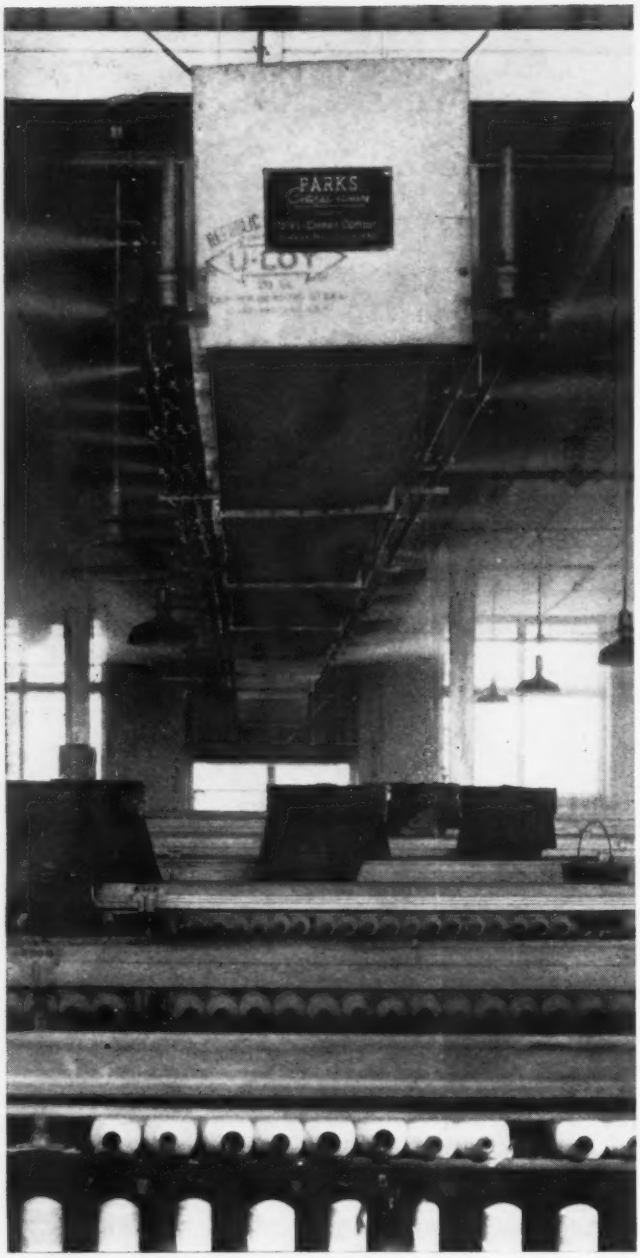
Wool goods manufacturers are offering goods sparingly, and for the most part allocating these among their regular customers. Women's wear is somewhat better off in this respect than men's wear, since in the former the use of blends is more readily acceptable and consequently relatively larger yardages are available. Argument over the question whether wool is really scarce or not continues and there is expectation that before long additional quantities will be released for civilian use.

Rayon is coming more and more under control of priorities and allocations and quantities for civilian use are getting less and less. All high-tenacity viscose rayon of 250 or coarser denier will be placed under the direct control of WPB as of March 1. Estimates state that 50,000,000 lb. of high-tenacity rayon is needed for use in tires and also that somewhat similar yarns are needed for cargo parachutes. Rayon gray goods sellers are paying more attention to the priority ratings on their orders and unrated business now has little chance. Converters find a growing shortage of dress goods numbers.

Hosiery manufacturers are watching the yarn situation. Knitters have been selling through March, but are not taking much business beyond that. As fine cotton yarn becomes scarcer there is more consumer interest evidenced in rayon full-fashioned with lisle tops and feet and demand for this construction is probably in excess of what can be supplied. OPA is watching to prevent price rises in these items. Further Government buying of men's socks has taken up a large part of the available half-hose production. WPB has reduced by 15% the amount of rayon yarn allocated to hosiery manufacturers to replace their former consumption of silk and Nylon.

Underwear manufacturers are wondering where the yarn is going to come from to make the garments which will be needed as the 1943 military program unfolds. Changes in specifications may be necessary to include a wider variety of yarns. The army's change from white to O.D. underwear will make no difference in the specifications other than in the matter of dyeing. A standardization program on heavy underwear is being formulated.

Outerwear buyers are trying to place early orders for next fall's goods and manufacturers are holding off their offerings due to uncertainty regarding manpower, wages, and raw materials. Blends will undoubtedly be in the lead. Wholesalers' seasonal stocks have been much reduced by a heavy consumer demand for all types of sweaters.



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pays for itself remarkably soon

smoother, more compact drafting; less waste and fly; higher and more dependable regains; greater strength with much more uniformity of numbers.

fewer stops; fewer adjustments; fewer piecings; fewer seconds; and more acceptable working temperatures as a by-product.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

PAINT RIGHT THROUGH WET FILM WITH DAMP-TEX

LIQUID PORCELAIN-LIKE ENAMEL

CHECK the following performance facts about this amazing enamel... then write us for complete details of our no-risk trial offer. **(1)** One coat of Damp-Tex covers. **(2)** Forces out moisture and dries overnight into porcelain-like waterproof film despite presence of moisture. **(3)** Sticks to wet or dry wood, metal, concrete, plaster and masonry. **(4)** Kills Rust, Rot, Dinge, Bacteria and Fungus*. **(5)** One gallon covers approximately 350 sq. ft. of porous surface, 450 sq. ft. of non-porous surface. **(6)** Will not check, peel, sag, soften or fade. No flavor-tainting odor. **(7)** Dries free of brush marks, may also be sprayed. Comes in colors and white.

*With Pre-Treatment.

FREE! *On the recommendation of the 4000 plants that use Damp-Tex, send for free descriptive folder R also details of our offer to ship you a trial order of Damp-Tex absolutely at our risk.*

STEAM TEST

Damp-Tex is unaffected by live steam common to many plants.

WASHING TEST

Constant moisture and repeated washings will not soften or in any way harm Damp-Tex.

FUNGUS TEST

Pre-Treated Damp-Tex will resist fungus, mold or mildew on the surface to be painted.

MOISTURE TEST

Water soaked bricks painted with Damp-Tex and dried in the sun prove the film will not blister or break.

CAUSTIC SOLUTION TEST

Two to three percent caustic washing solutions are not injurious to Damp-Tex Enamel.

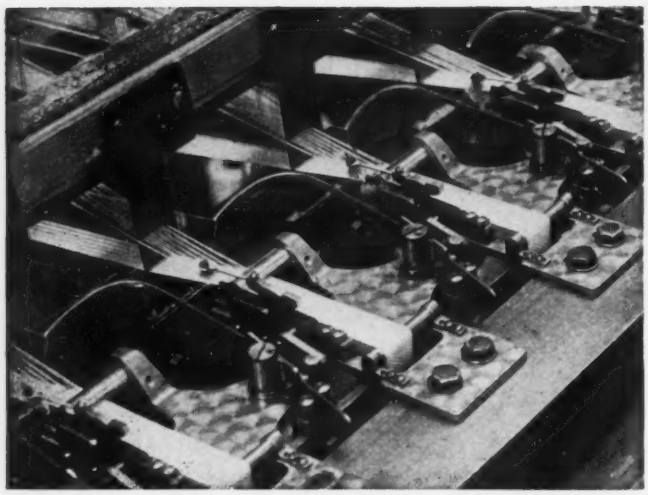
DAMP-TEX

THE WET SURFACE ENAMEL

ACID TEST

Damp-Tex is unaffected by lactic and other common food acids.

STEELCOTE MFG. CO. GRATIOT at THERESA ST. LOUIS, MO.



Change with the Times

CLUTSOM HIGHSPEED SHUTTLELESS LOOM

We are still planning for War but many executives are planning ahead for Peace too.

Vast production of narrow fabrics will be needed after the war and the trade will go to those mills best equipped. It is time to consider weaving in the modern way, time to discard the old, time to think in terms of speed and high production at lower cost. Time to change with the Times.

Why not let us give you a demonstration of weaving in the modern way—those old type looms must be wearing out under the wartime beating they are taking.

CLUTSOM MACHINES INC.

205 EAST 42 STREET NEW YORK

Telephone MUrray Hill 4-2327

FACTORY: Springdale, Connecticut

NEWS ABOUT MEN

H. H. Willis, dean of the Clemson (S. C.) Textile School for the last 15½ years, has resigned that position to undertake several new responsibilities. He will devote part of his time to the textile training program under development in South Carolina; he will work directly with several textile companies, advising on labor relations, job evaluation and plant surveys; he will also spend further time in developing textile text books. Following his resignation, **R. K. Eaton** was made acting dean of Clemson Textile School.

Willard F. Staples has resigned as general manager of the Vernay-Brunswick Mills, Brunswick, Maine, formerly Cabot Manufacturing Co. He had been in the industry for over 35 years of which the last 13 have been spent at Cabot. He is a vice-president of the National Association of Cotton Manufacturers.

A. J. Owler, lately agent of the Paul Whitin Mfg. Co., Northbridge, Mass., is now vice-president and general manager of the Vernay-Brunswick Mills, Brunswick, Maine. This plant, as previously reported, was formerly the Cabot Mfg. Co., and is now under the direction of **Gilbert Vernay.** It will run on high-grade rayons, spun-rayons and combination goods. Mr. Owler has worked his way up in the industry, having started his career at the old Nottingham Mill in Providence, R. I., some years ago as a carder.

T. H. Coryat, of Stein, Hall, & Co., New York, has been elected president of the Hard Fiber Association, to succeed **William Knight,** of Hanson & Orth, who resigned to accept a wartime post with the Government in Washington.

Ward R. Hickok has been appointed vice-president of North Star Woolen Mill Co., Minneapolis, Minn.

Erwin Dallo, for the last four years in the fabric development department of American Bemberg Corp., New York, has resigned and is establishing a converting firm to handle rayon fabrics in the dress and underwear trade.

Harrison J. Biggi, of the Providence office of North American Rayon Corp., has resigned and will join the staff of Iselin-Jefferson Co., New York where he will be associated with the Rayon Fabric Division. North American Rayon Corp. has appointed **Richard I. DeVine** to succeed Mr. Biggi at Providence.

Clarence C. Brown has resigned as assistant secretary and assistant treasurer of Industrial Rayon Corp., Cleveland, Ohio, to accept a position with General Motors Corp.

George Pierce Metcalf has been elected president of the Wanskuck Co., Providence, R. I.; **Stephen O. Metcalf,** treasurer; **Robert L. Turnbull,** vice-president and assistant treasurer; **Arthur Ingraham, Jr.,** agent; and **John Richardson, Jr.,** secretary. **George Metcalf** succeeds Jesse H. Metcalf who died last October.

D. F. Byrnes, president of Byr-Kay Co., Delavan, Wis., has been named chief of the Knitted Outerwear Section of the Knit Goods Branch, Textile Clothing and Leather Division of WPB, Washington. Mr. Byrnes continues his association with the Byr-Kay Co., which is now in charge of **C. J. Beamsley,** vice-president, and **A. J. Vaugh,** secretary-treasurer.

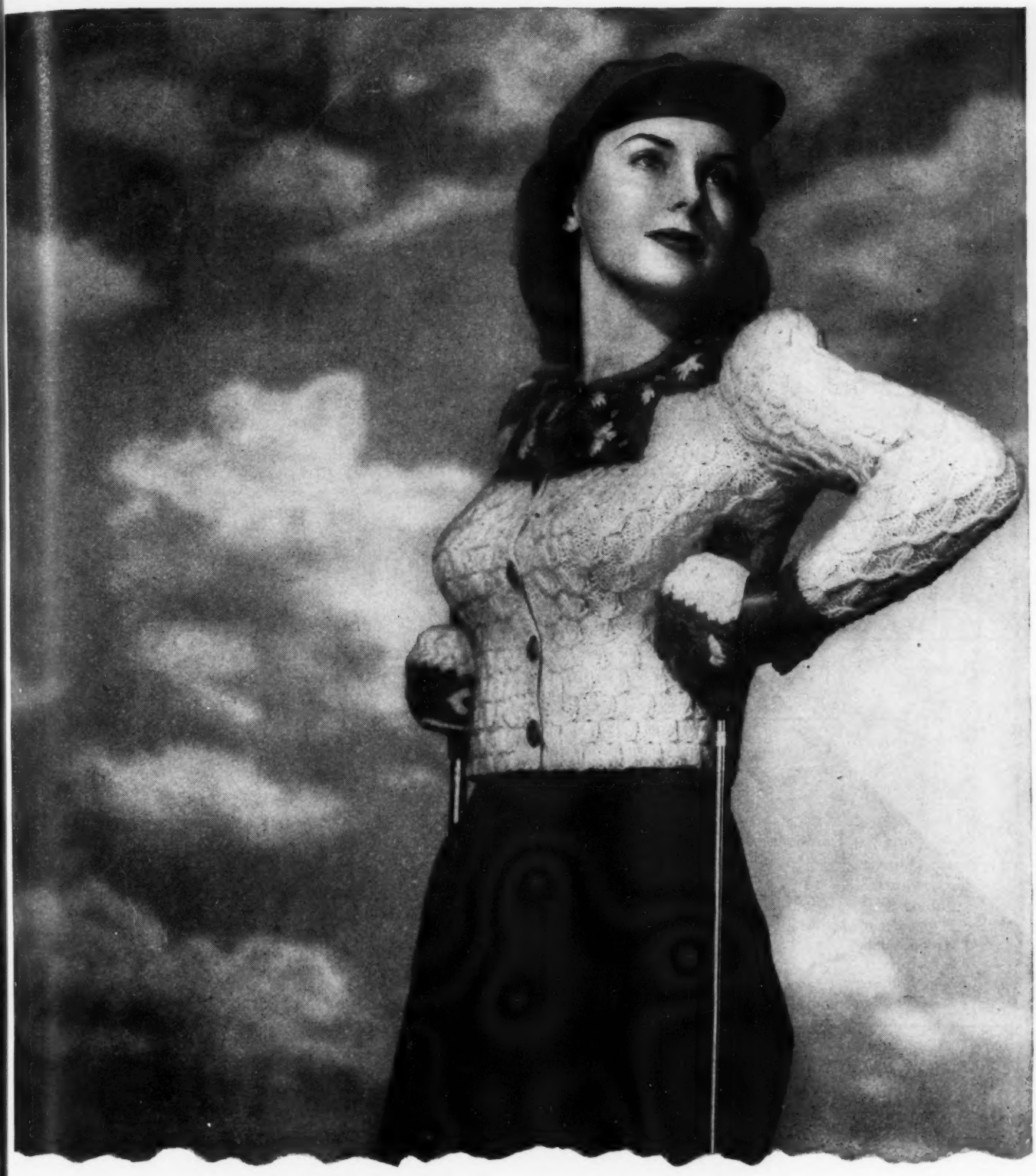
Cornelius J. Callahan, general manager and vice-president of Hayward-Schuster Woolen Mills, Douglas, Mass., has been honored by Pope Pius with appointment as a Knight of Malta.

Richard N. Johnson, recently publisher of *Boston Evening Transcript,* has been named director of the Consumer Goods Division, WPB, Washington, D. C. Prior to 1938, Mr. Johnson was for ten years engaged in the textile business. He was president of Hillsboro Woolen Mill Co. and also associated with Pacific Mills and Bemis Brothers Bag Co.

Wm. D. Anderson, Macon, Ga., chairman of the board of the Bibb Mfg. Co., has been reelected Georgia director of the National Association of Manufacturers for 1943.

J. E. Sirrine, president of J. E. Sirrine & Co., Greenville, S. C., an official of several cotton mills and a director in many cotton mills, will in June receive the honorary degree of doctor of laws from Furman University.

J. Harold Lineberger, of Acme Spinning Co., Belmont,



THE PROPER CARE of fine woolens is as much a matter of concern to textile manufacturers as it is to the women who ultimately wear them. Wool must be carefully processed both before and after it is loomed. That is why producers of fine woolens are among the most consistent users of Colgate-Palmolive-Peet processing agents.

Manufacturers of other fabrics, too, find C.P.P. processing agents specially valuable—for in spite of wartime material and style changes, C.P.P. wetting, fulling, scouring, and dispersing agents are effective on all types of material. Ask your local Colgate-Palmolive-Peet representative for detailed information on the full line of high-quality C.P.P. soaps and detergents made specially for the textile industry.

Jersey City, New Jersey
Jeffersonville, Indiana

COLGATE-PALMOLIVE-PEET CO.

Kansas City, Kansas
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COLGATE T.K.S. SOAP • COLGATE KWIKSOLV • COLGATE FULLING SOAP • COLGATE BLENDED FULLING SOAP • COLGATE FORMULA 25
COLGATE WHITE SOAP FLAKES • ARCTIC CRYSTAL FLAKES • BADGER FLAKES

"INDEX" To Better Quality Textiles

FOR	Dyeing Flameproofing	USE SOLVAY AMMONIUM CHLORIDE
FOR	Dyeing	USE SOLVAY CAUSTIC POTASH
FOR	Dyeing Hypochlorite bleaching Kier boiling Mercerizing Neutralizing	USE SOLVAY CAUSTIC SODA
FOR	Hypochlorite bleaching Oriental rug finishing Water conditioning	USE SOLVAY LIQUID CHLORINE
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FOR	Acid neutralizing Degumming Fulling Scouring Soap building Softening	USE SOLVAY SNOWFLAKE CRYSTALS
FOR	Acid neutralizing Fulling Hypochlorite bleaching Kier boiling Scouring Soap building Water conditioning	USE SOLVAY SODA ASH
FOR	Dyeing	USE SOLVAY SODIUM NITRITE
FOR	Acid neutralizing Degumming Fulling Scouring Soap building Softening	USE SOLVAY TEXTILE SODA

FOR TECHNICAL SERVICE In the Solvay Laboratories, textile men with years of experience study your problems and make recommendations on the basis of laboratory findings. *Solvay will be glad to send these textile specialists into your plant to study actual operating conditions and help adapt laboratory findings to specific plant conditions.* Write today to

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 Rector Street • New York, N. Y.

NEWS ABOUT MEN

N. C., has been elected secretary of the company to succeed the late R. B. Suggs, Sr. **R. B. Suggs, Jr.,** was elected assistant secretary-treasurer.

R. C. McCall, president of Convenience, Inc., Greenville, S. C., has been named president of Victory Textiles, Inc., Greer, S. C. This new company has purchased the Franklin Mills from **Earl R. Stall,** receiver of that property. The company has lately been operating 75% on war work and it is believed this percentage will be increased. **J. W. Norwood, Jr.,** is vice-president.

James Diephuis has been appointed merchandise manager of the worsted division of Pacific Mills, New York, succeeding **Charles W. Blackhall,** who resigned because of illness. Mr. Diephuis has been with Pacific 17 years.

K. W. Mauney has been elected president of the Mauney Steel Co., which operates mills at Kings Mountain, N. C., succeeding the late D. H. Mauney.

W. P. Fickett, president of the Textile Fabrics Association, New York, has been elected president of the Arkwright Club.

T. D. Flack is now superintendent of Wade Mfg. Co., Wadesboro, N. C., succeeding **I. B. Covington,** who has retired from active duties, but remains a vice-president and director of the company.

Richard M. Ott, with William G. Davidson & Co., Boston wool dealers, for the last 27 years, has resigned from that firm and will start his own business under the name of Richard M. Ott & Son.

Lessing J. Rosenwald, director of the Conservation Division of WPB since it was first established over a year ago, has resigned, effective Feb. 1.

Julian M. Longley, agent for American Thread Co., Dalton, Ga., has been promoted to general manager of the southern operations of the company, including also the company's finishing plant at Bristol, Tenn.

John C. Roberts, treasurer of Textiles, Inc., Gastonia, N. C., is the newly elected president of the Gastonia Chamber of Commerce.

Dean C. White is the new personnel manager of Edwards Mfg. Co., Sanford, N. C. Mr. White resigned as senior administrative assistant to the quartermaster at Camp Croft, S. C., to accept the new post.

ROBERT H. TEAT

Robert H. Teat, of Callaway Mills, La Grange, Ga., was given a testimonial dinner at the Hotel Vanderbilt, New York, Dec. 31, by his associates in the New York office on the completion of 25 years with the Callaway organization.

David Getaz, formerly assistant production manager of Renfrew Bleachery, of Brandon Corp., Travelers Rest, S. C., has been promoted to production manager succeeding **Wm. Goldsmith, Jr.,** who resigned to become treasurer and office manager of the William Goldsmith Co., founded by his father.

Mrs. Kathleen Catlin, who has handled fashion promotion and publicity for the last three years for Munsingwear, Inc., Minneapolis, Minn., has been named advertising and promotion director, succeeding **R. T. Challman,** resigned. She is a graduate of the University of Oregon.

Albert J. Huber, fabric technician, has joined the Fabric Development Department of American Viscose Corp., New York, where he will assist **Pierre Sillan,** in charge of the department.

John A. Skedgell, agent of Grosvenor Dale Co., North Grosvenordale, Conn., is retiring to his farm at West Thompson after 47 years in the cotton manufacturing business. He started his career with the Ann & Hope Mills, Lonsdale, R. I.

Flint Garrison has been retained as special consultant to the Wholesale Dry Goods Institute, New York. He was formerly Director-General of the Institute, and is now publisher of *Garrison's Magazine.*

John Whitelock, of Whitelock & Kay, Chicago, has been elected president of the Hosiery Mill Representatives Club of Chicago. **James G. Wright**

The familiar Miracle

Look twice. You think you see a negative of two soldiers clashing in bayonet practice. Actually you are looking at sunlight and silver bromide.

The mysterious action of light on certain silver salts is just as much a miracle today as it was a hundred years ago when the first photographs were made.

Hardly less amazing is the remarkable sensitivity of present-day photographic emulsions.

These new films and papers could not be manufactured without exacting control of temperature, control of humidity and protection against dust. *Air conditioning* makes them possible.

Air conditioning and refrigeration play a part in many photographic processes. They are being used to speed up military photography . . . improve all photography.

Today, air conditioning equipment . . . developed by General Electric . . . has been made more compact, more flexible to meet unusual wartime requirements.

After the war, these improvements will result in better air conditioning for offices, stores, theatres, hotels and many other civilian purposes. When the war is won, General Electric will provide this better air conditioning—for a better world.

Air Conditioning and Commercial Refrigeration Department, Division 432, General Electric Co., Bloomfield, New Jersey.

Air Conditioning by GENERAL ELECTRIC

DARNELL
CASTERS & WHEELS

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A SAVING AT EVERY TURN

For light, medium or heavy duty service Darnell Casters and Wheels are dependable — saving floors, equipment, money, time and temper.

REDUCE THE OVERHEAD THAT IS UNDERFOOT!

Ask for 192 Page DARNELL MANUAL

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DARNELL CORP. LTD., 60 WALKER ST., NEW YORK, N.Y.
LONG BEACH, CALIFORNIA, 36 N. CLINTON, CHICAGO, ILL.

NEWS ABOUT MEN

has been named first vice-president.

Ethel Winston, recently associated with the New York office of Cabot Mfg. Co. is joining the staff of Iselin-Jefferson Co., New York, as sales assistant in the rayon division.

Fred Tattersall, formerly priorities analyst, has been appointed acting manager of the Greenville, S. C., office of the War Production Board.

James A. Huff, Rockwood (Tenn.) Mills executive, has been elected president of the First National Bank in that city for the eighth consecutive year.

Tilden W. Bridges, for the last four years director of the vocational school of Marshall Field & Co., Spray, N. C., has resigned and has gone to Belmont, N. C., where he will be director of the new North Carolina Textile School, now under construction. He will supervise the installation of the machinery of the school.

Young M. Smith, Hickory, N. C., has retired from the practice of law and has become associated with the Shuford Mills. He will handle priorities and matters of a legal nature for the organization, and will be connected with the business office of the mills, working with Secretary J. W. Warlick.

W. Clint Madaris has been appointed superintendent of Knit-Sox Hosiery Mills, Hickory, N. C., succeeding the late Walter Slayton.

J. H. Swanson, traffic manager of Bibb Mfg. Co., Macon, Ga., has been appointed to the Cotton Goods Industry Advisory Committee of the War Production Board. He will continue his work with the Bibb company and will be loaned by the company to the Government whenever he is required to devote full time to the WPB work.

James Cooke, for the last year general superintendent of Excelsior Mills, Union, S. C., has resigned, and been succeeded by **Peter Haynes,** former superintendent of Madison (Maine) Woolen Mills.

Walter F. Kraemer has resigned as superintendent of Pendleton Mfg. Co., LaFrance, S. C., and became head of dressing, including winding, warping and slashing, at the Dan River division of Riverside & Dan River Cotton Mills, Danville, Va.

Harry Denny has returned to his former position as overseer of the weave room at Meredith (N. H.) Linen Mills.

Archie K. Innes, chemist and dyer at M. T. Stevens & Sons Co., Franklin, N. H., has been elected to the Franklin Board of Education for a three-year term.

John L. Ledbetter has been promoted to superintendent of the spinning and carding departments of Riverside division of Riverside & Dan River Cotton Mills, Danville, Va.

Wm. Pitts has become general superintendent of spinning at the Catherine unit of Avondale Mills, Sylacauga, Ala.

Robert P. Sweeny, formerly superintendent of Exposition Cotton Mills, Atlanta, Ga., has been appointed chief of the textile staff, Bureau of Foreign & Domestic Commerce, Department of Commerce, Washington, D. C.

Troy H. Carter, formerly of Greer, S. C., has recently assumed his new duties as superintendent of Victor-Monaghan Co's mill at Walhalla, S. C.

Charles Reynolds was recently promoted to general superintendent of Spindale (N. C.) Mills, Inc.

W. H. Thompson has resigned his position with Gate City Cotton Mills, East Point, Ga., and become superintendent of the spinning department of Exposition Cotton Mills, Atlanta, Ga., succeeding **W. T. Hurd.**

Lewis N. Peeler has resigned from Rockfish Mills, Hope Mills, N. C., and become night superintendent of spinning at the American Mill, unit of Algodon Mfg. Co., Bessemer City, N. C.

C. E. Davis, Jr., has resigned from Cedartown (Ga.) Yarn Mills, and has become superintendent of spinning at LaFayette (Ga.) Cotton Mills.

C. P. Puckett has been promoted to night overseer of weaving at No. 4 plant of Chadwick-Hoskins Co., Charlotte, N. C.,

Archie McAliley has resigned as overseer of carding, third shift, at the Springstein plant of Springs Cotton Mills, Chester, S. C., and has been succeeded by John Flynn.

Joseph L. Anderson is now superintendent of H. C. Townsend Cotton Mills, Anderson, S. C., having been promoted to this position.

Doyal Crenshaw has been appointed general second hand at the Glen Raven Cotton Mills.

DRAX (#1860) does it!

. . . the water-repellent textile finish, by the makers of Johnson's Wax

Many uniforms, many fabrics are now waxed with DRAX. The demand for this new textile finish is spreading rapidly throughout the industry.

DRAX is a high-quality, water-repellent textile finish—a stable, aqueous emulsion of waxes and non-critical salts and emulsifying agents. DRAX does not change color or "hand" of textiles. It may be used on vat or sulphur-dyed textiles.

Fabric fibres are thoroughly impregnated by the extremely fine, uniform particles of the DRAX emulsion. Non-flammable and inexpensive, DRAX is supplied to meet Army Quartermaster Department specifications.

DRAX is also available in special formulations with mildew-resisting agents added.

Write for further facts about DRAX. Test samples will be sent promptly.

DRAX is being advertised on the Fibber McGee and Molly program, radio's No. 1 show.

DRAX HAS THESE IMPORTANT CHARACTERISTICS

. . . due to a special method of regulating the colloidal particle size of the emulsion during its manufacture:

1. High water-repellency for all textiles;
2. Complete stability during storage;
3. Acidity (pH 3.5 to 5) requires a minimum of control;
4. Application at temperatures varying from room to boiling;
5. Dilution with ordinary water;
6. Even distribution, uniform application on entire run of cloth;
7. Economical and easy to apply. Has an excellent "money value."

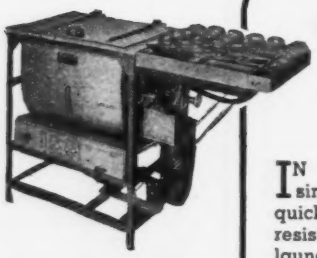
TRY DRAX . . . by the makers of Johnson's Wax

S. C. JOHNSON & SON, Inc.

Industrial Wax Division, Department TW-23, Racine, Wisconsin

☆ ☆ ☆ ***Buy United States War Savings Bonds and Stamps*** ☆ ☆ ☆

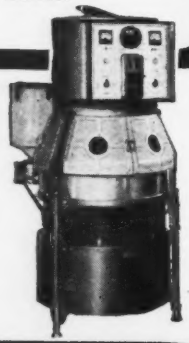
ATLAS-OMETERS



ACCELERATED TESTING EQUIPMENT

IN Atlas-Ometers you have a simple, easy way to learn, quickly, how your products will resist fading, or deterioration from laundering. Atlas-Ometers have been a valuable mainstay of the textile industry for over a quarter of a century. Their time-saving guidance is more essential right now than ever before.

LAUNDER-OMETER—Standard laboratory washing machine of the A. A. T. C. C.—measures resistance to washing action, shrinking, staining, color fastness to soaps and solvents. All factors carefully controlled—can be produced exactly at any time.

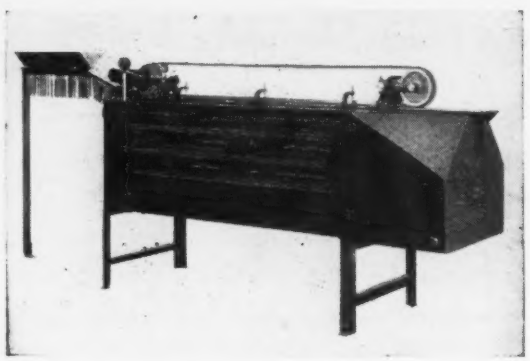


FADE-OMETER—Rotates specimens around the Atlas Enclosed Violet Carbon Arc, the closest approach to natural sunlight. Temperature automatically controlled.

WEATHER-OMETER—Duplicates effect of actual exposure—months of sun, rain, heat and cold condensed to a few days.

ATLAS ELECTRIC DEVICES CO.
371 W. Superior St., Chicago, Illinois

ATLAS-OMETERS
LAUNDER-OMETER • FADE-OMETER • WEATHER-OMETER



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LOOM BOBBIN STRIPPER
for
RAYON YARNS
The Terrell Machine Co., *Inc.*
CHARLOTTE, N. C.

James F. Notman, Needham, Mass. . . . . N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J., Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . . Canada
Geo. Thomas & Co., Manchester, Eng. . . European Agent

No. 2 plant, Kinston, N. C., He was formerly fixer in different departments of the mill.

William F. Neuman has resigned from the Excelsior Woolen Mill, Union, S. C., to become assistant superintendent of A. & M. Karagheusian, Inc., Roselle Park, N. J.

A. B. Brown, formerly with Phenix Mills, No. 1 plant, Kings Mountain, N. C., has entered upon his new duties as night superintendent of Carter Mills, Lincolnton, N. C.

I. M. Shamblin, who has held the position of second shift overseer at Lindale, Ga., plant of Pepperell Mfg. Co., has been promoted to overseer of weaving, succeeding **H. T. Gilbert,** who recently resigned to become assistant superintendent of Exposition Cotton Mills, Atlanta, Ga.

J. Harmon Strait, formerly overseer of weaving at Hampton Division of Pacific Mills, Columbia, S. C., with four units in this division, is now superintendent of the Granby plant of the same company, with **G. P. DeBrule** as assistant superintendent.

R. H. Tuttle is now in charge of the personnel department of Marshall Field & Co., Spray, N. C.

Textile Men in Armed Services

Hampton L. Daughtry, formerly southern representative of McCampbell & Co., is now a captain in the Army associated with the Fighter Command School, G.M.B., Fair Grounds, Orlando, Fla.

Lionel P. Adams, formerly secretary of the Textile Export Association of the U. S. and now in the Army Air Corps, has been promoted to the rank of captain.

Myer E. Kotzen, president of Mohn Hosiery Co., Reading, Pa., has been commissioned a second lieutenant in the Army, and been assigned to Jefferson (Mo.) Barracks, U. S. Air Corps. He entered the army last March as a private.

John D. Pursley, formerly of Pacific Mills, Columbia, S. C., and more recently a second lieutenant in the army, has been promoted to first lieutenant. He is now stationed at Fort Meade, Md.

Erb N. Ditton, technician for Gotham Hosiery Co., New York, is in training at Fort Dix, N. J., where he is serving as a private in the Army.

Fred Graichen, designer at Fulton (N. Y.) Mills of American Woolen Co., is now a captain in the Army at Camp Lee.

Wm. B. Johnson, Jr., formerly an analyst with American Viscose Corp., Roanoke, Va., now serving in the Army, has been promoted to lieutenant-colonel. He attended the Coast Artillery School in 1932 and the Command and General Staff School at Fort Leavenworth, Kan., in 1942.

Ross N. Stribling, formerly with the American Enka Corp., Enka, N. C., has been promoted to the rank of major, made executive officer and placed second in command of the 19th heavy weapons battalion at Fort McClellan, Ala.

Gerald L. Chapman, formerly superintendent of Barbara Mills, Inc., Salisbury, N. C., but more recently a captain in Army ordnance, has been ordered overseas.

Robert S. Pannill, Martinsville, Va., a salesman for Pannill Knitting Co., of Martinsville, has been commissioned second lieutenant in Army Air Corps, and has gone to Miami Beach, Fla., where he will be stationed temporarily.

James Irvine, personnel manager of Scott & Williams, Inc., knitting machine manufacturers, in Laconia, N. H., has reported for active army duty as a major at Fort Bellevoir, Va.

Robert D. McDonald, yarn broker at Chattanooga, Tenn., has been commissioned a major and assigned to duty as executive officer of the new Army Air Force classification center, Nashville, Tenn.

B. G. Mauney, formerly head of the mechanical department of Phenix Mills, Kings Mountain, N. C., has enlisted as machinist, second class, U. S. Navy, Newport, R. I.

Ralph Gossett, Jr., formerly in the mill supply business in Greenville, S. C., is now an ensign in the Navy.

Fuller E. Callaway, Jr., president of the Callaway Mills, LaGrange, Ga., has been given commission as captain in the Georgia State Guards to command Troup County units of

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Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

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which is almost twice as effective as glycerin. It is a heavy, colorless and odorless liquid, non-volatile and non-inflammable. It is

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without preference rating. Makes gums swell, exerts smoothing effect on starch paste, prevents gelatine and glue from gelatinizing.

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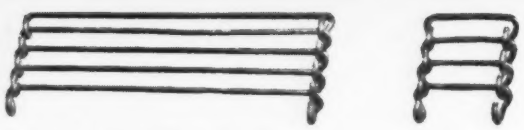

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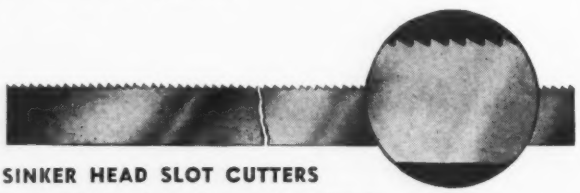

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The ideal tool for cleaning out slots in sinker and divider heads. Made in all gauges. Each one comes in a leather carrying case.

THOMAS & SKINNER
STEEL PRODUCTS COMPANY
1119 East 23rd Street — Indianapolis, Indiana

NEWS ABOUT MEN

that organization. He succeeds **R. S. O'Neal.**

Charles Oakley Robinson, Jr., manager of Elizabeth City (N. C.) Cotton Mills has been commissioned an ensign in the Naval Reserve. He will report to the Naval Training School at Fort Schuyler, N. Y.

Earle C. Powdrell, Charlotte, N. C., formerly branch manager and southern sales manager for Powdrell & Alexander, Inc., has been commissioned a lieutenant in the Navy, and has reported for active duty.

Garland Harold Branch, assistant control manager with the Solvay Process Co., Hopewell, Va., has been appointed an ensign in the Naval Reserve.

Joseph H. White has resigned as chief of the Textile Section of the Office of Civilian Supply, WPB, to enter the Army as an enlisted man. It was understood that he would be assigned to Camp Lee.

Milton E. Tager, former advertising manager of Tager Yarns, New York, has graduated from the Army Administration School at University of Florida and been commissioned a second lieutenant.

Col. J. Norman Pease, Charlotte, N. C., textile and industrial engineer, now serving in the army, has been transferred from his administrative post in Washington, D. C., to a field command of troops.

C. Russell Gill, who is vice-president of the Southern Sizing Co., Atlanta, Ga., has entered the Chemical Warfare Service of the U. S. Army, and is now stationed at Gadsden, Ala., for his preliminary training.

Sterling F. Menzies, president of Menzies Co., hosiery dyers, Hickory, N. C., has reported for duty as a seaman, first class, in the Seabees, Navy construction battalion.

Frank J. Lowe, who has been employment interviewer for the acetate rayon unit of E. I. du Pont de Nemours & Co., Waynesboro, Va., has been commissioned an ensign in the U. S. Naval Reserves and has reported to the naval training school at Harvard University, in Cambridge, Mass.

T. M. Wells, an accountant for Cannon Mills Co., Kannapolis, N. C., for the last five years, has been commissioned a captain in the Army and has gone to Princeton University for four weeks of training. He will be assigned to the post exchange service of the Army.

I. M. Scott has been promoted from first lieutenant to captain of infantry. He was formerly vice-president of Lee I. Robinson Hosiery Mills, Inc., Philadelphia.

Albert Whisnant, formerly an official of Stonecutter Mills Co., Spindale, N. C., is now stationed in Africa as a lieutenant in the Army.

Oliver D. Landis, Charlotte, N. C., representative in that section for Graton & Knight Co., manufacturers of belting, is now a lieutenant in Naval Reserve.

Stanton D. Sanson, who entered the Army as captain last July after 20 years in the hosiery industry, has been promoted to major and is associated with the Chemical Warfare Service.

Bert Schwartz, formerly associated with his father Max Schwartz in the New York converting firm of that name, who joined the Army in February, 1940, and was a bomber pilot in the Army Air Corps, is reported to be a prisoner at a concentration camp in the Philippines. Lieut. Schwartz had worked at the Charlton Mills, Fall River, and in the plant of the old Imperial Printing Co.

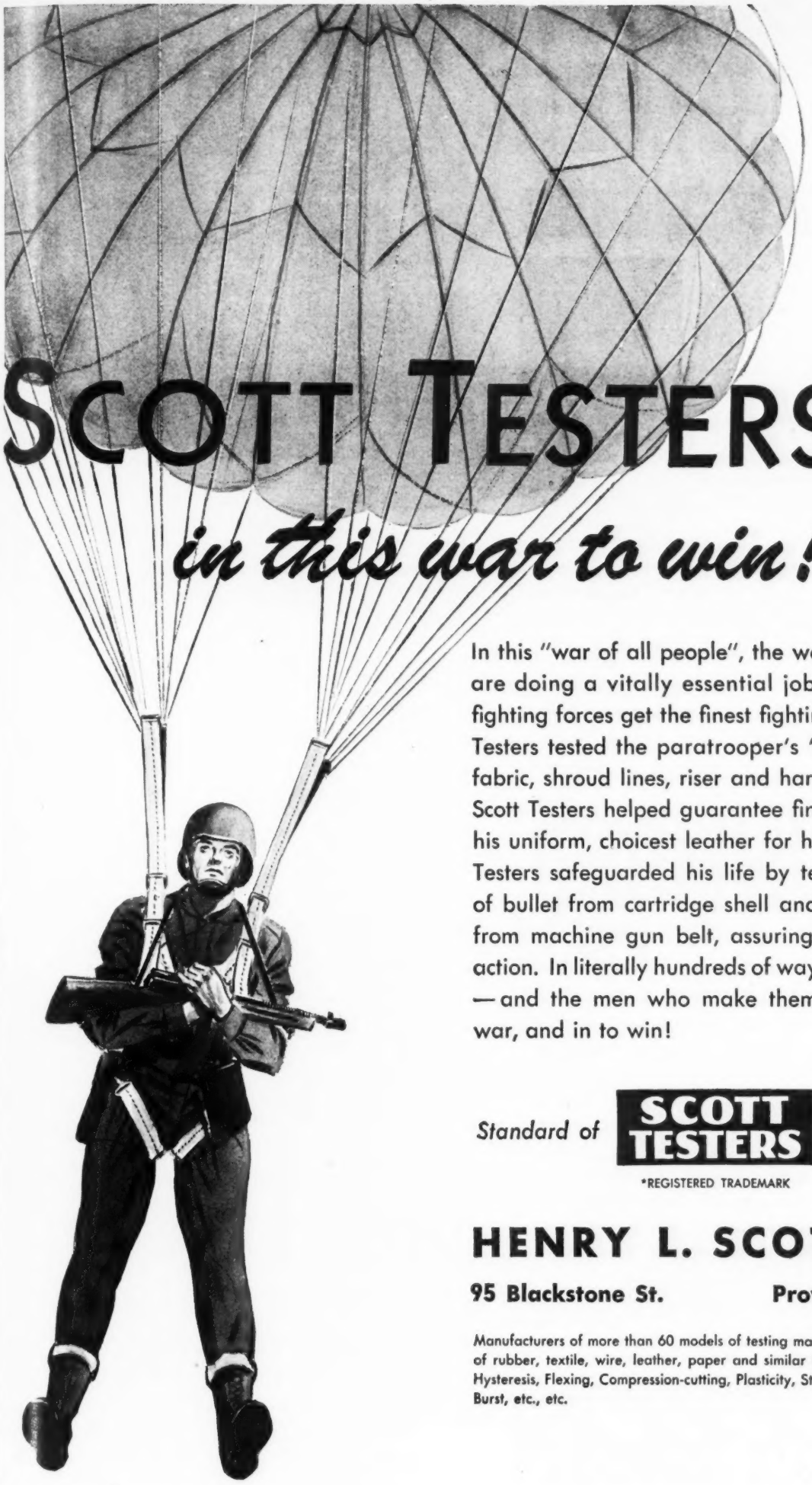
Robert Saltonstall, Jr., personnel director for Arlington Mills, Lawrence, Mass., has been commissioned lieutenant, junior grade, in the Navy where he will be engaged also in personnel work. He is succeeded at the mill by **Ralph Edson.**

I. M. Scott, vice-president of Lee I. Robinson Hosiery Mills, Philadelphia, has been promoted to rank of a captain in the Army.

R. Bigham Smith, sales representative with headquarters in Atlanta, Ga., for the Terrell Machine Co., of Charlotte, N. C., has entered active duty as lieutenant in the Naval Reserve for engineering duty. His headquarters are 201 Comer Building, Birmingham, Ala.

Wm. H. Moore, formerly superintendent of Norwood (N. C.) Mfg. Co., and son of T. B. Moore, superintendent, is now serving in the Army and is located at Camp Lee, Va.

Edward Strain, formerly a member of the office force of Crown Cotton Mills, Dalton, Ga., now serving in the Army, has been promoted to captain in Air Corps.



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In this "war of all people", the workers at Scott are doing a vitally essential job, helping our fighting forces get the finest fighting tools. Scott Testers tested the paratrooper's 'chute canopy fabric, shroud lines, riser and harness webbing. Scott Testers helped guarantee finest fabrics for his uniform, choicest leather for his boots. Scott Testers safeguarded his life by testing the pull of bullet from cartridge shell and of cartridges from machine gun belt, assuring perfect firing action. In literally hundreds of ways, Scott Testers — and the men who make them — are in the war, and in to win!

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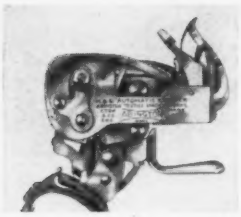

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Only in Abington Knotters do you obtain these 4 advantages:

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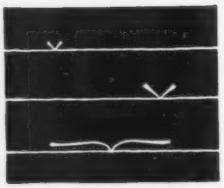

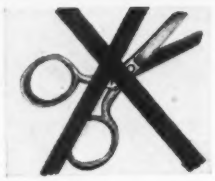

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Drummond has first call with textile finishers who "know their soaps" . . . . A high-body product of low alkali content . . . . No filler of any kind . . . . A high binding quality that results in minimum flocking. Saves on steam and water because it rinses easily and completely . . . . Better fulling and scouring . . . . Leaves fabrics perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . . Want to try it? Just write us today for a free working sample and test Drummond Soap on your own goods.

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Obituary

WM. E. WINCHESTER

William E. Winchester, 65, who retired recently as vice-president of Deering, Milliken & Co., New York, died Jan. 16. After brief mill experience and four years of teaching textiles at Philadelphia Textile School and as head of the former Mississippi Textile School, he joined Deering-Milliken in 1905 as a salesman, he became a partner in 1918, and was later made vice-president when the firm incorporated. He recently resigned as president of the Lockwood Co., Waterville, Me. He had formerly been president of Monarch Mills, Gainesville Cotton Mills and Whitney Mfg. Co., and an official of Abbeville Cotton Mills, Darlington Mfg. Co., Dallas Mfg. Co., Gaffney Mfg. Co. and Judson Mills.

William D. Judson, 72, member of the commission house of Parker, Wilder & Co., New York, died Jan. 16. He joined the firm in 1896, was a partner from 1907 to 1938 and a special partner since then. He was a pioneer in the merchandising of mill-made bed-sheets, working with the Naumkeag Steam Cotton Mills in particular.

H. de Forest Lockwood, 76, at one time treasurer of Pacific Mills, of Bates Mill, and of Edwards Mill, died Jan. 12 at his home in Boston, Mass.

Charles A. Meister, president of C. A. Meister Co., New York, died Jan. 9. He had been active in the cotton yarn industry for over 50 years.

George W. Fiss, Jr., manager and owner of the Philadelphia Laboratory-Textile Testing, Philadelphia, died Feb. 1. He was manager for 24 years of the Philadelphia branch of the United States Testing Co. until he went into business for himself in 1941.

Xavier A. Kramer, 65, a founder of McComb (Miss.) Cotton Mills, died recently.

Louis Weber, Sr., 79, president of Cambria Silk Hosiery Co., Olney, Pa., died Jan. 26.

William Clifford Gaunt, 69, who at one time owned and operated 24 wool manufacturing plants in Great Britain, Canada, France, Australia, Poland, and this country, died in Apporley Bridge, England late in December. He purchased the Passaic (N. J.) Worsted Spinning Co. from the Alien Property Custodian of the United States early in 1918, and operated it until its close in 1928.

George Wyner, 80, treasurer of the Shawmut Woolen Mills, Stoughton, Mass., and a director of the Robinson Processing Co., died at the Ritz-Carlton Hotel, Boston, Mass. on Jan. 4. He had built the hotel in 1926.

Frank S. Wilcox, 70, president, treasurer and buyer for Tryon (N. C.) Processing Co., died recently.

L. W. C. Blalock, 83, who along with his father organized Goldville (S. C.) Mfg Co., a yarn mill, in 1902, died recently.

Allan E. Cuthbertson, 53, president of Harding Carpets Ltd., Brantford, Ont., director of Slingsby Mfg. Co., died recently.

James Parks Grey, 82, for many years operator of Grey Hosiery Mill, Bristol, Va., died in Charlotte, N. C., recently.

Pryce F. Fitch, president and general manager of Dominion Silk Mills Ltd., Toronto, Ont., died recently.

Robert J. Carson, 94, died at Mt. Airy, Philadelphia, Pa., Jan. 10. He headed the Franklin Mills, Kensington, Pa., for many years until his retirement some time ago. He was one of the few Civil War veterans still left in Philadelphia.

L. C. Wemple, 72, vice-president and general manager of Marinette (Wis.) Knitting Mills, until his retirement three years ago, died recently. He was with the firm over 30 years.

R. B. Suggs, 62, of Belmont, N. C., died Dec. 21. He organized the Acme Spinning Co. in 1919. He was secre-

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WARP SIZING—

NALEX—for fine cotton yarns.
LANAMYL—for worsted yarns.
FIBERJEL V—for filament viscose yarns.
FIBERJEL SR—for spun rayon yarns.

FINISHING

FIBERTEX—for sheer, crisp finishes.
NAPO GUM—for full, weighty finishes.
SPUNJEL—for spun rayon finishes.

PRINTING

AMYLO—for cotton printing. (replaces Natural Gums.)
VAT GUM #11—for rayon printing.
AMBER GUM (Prepared)—for rayons and cottons.

All made from Domestic Raw Materials and available in Large Quantities.

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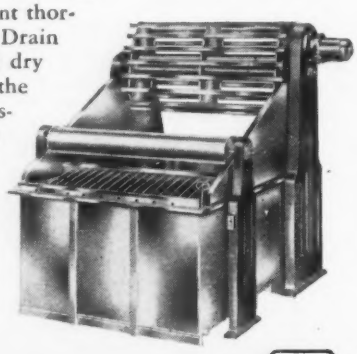
Keep war production moving by keeping your stainless steel equipment at top efficiency Regardless of the solution you use, clean your equipment thoroughly at least once a week. Drain it, wash with hot water and dry with an air hose, or brush the bottom as free of water as possible and then let it dry This is your duty under the all-out war production program.

All orders subject to Government priority regulations



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NEWS ABOUT MEN

tary-treasurer of that company from its organization until his death. He was vice-president of the Perfection Spinning Co., and a director of several other mills. Mr. Suggs was one of the organizers of the Gaston County Cotton Manufacturers Association in 1925, and served on its board of directors until it became the Southern Combed Yarn Spinners Association in 1933. He was then made a vice-president and served in that capacity until 1939.

Frank S. Wilcox, 70, manufacturer of hosiery and head of the Tryon (N. C.) Processing Co., died recently.

Jacob Kohn, 80, president of the Standard Textile Co., Memphis, Tenn., died Dec. 30.

John F. Fead, treasurer, of John L. Fead & Sons, Port Huron, Mich., died recently. The business had been established by his father in 1899.

William Clay Brickner, 79, pioneer manufacturer of Sheboygan, Wis., former owner of the Brickner Woolen Mills at that city, died late in December.

George Bower, 57, founder and agent of the Bower Mill, a division of Nashua Mfg. Co., died at Lewiston, Me., Dec. 28. He organized the mill bearing his name in 1924. It was acquired by the Nashua company in 1940.

Robert Thompson, 85, inspector and buyer of cotton for Boston Mfg. Co., Waltham, Mass., until his retirement in 1927, died on Dec. 28.

Harry Barber, 68, industrial heating engineer and contractor in New England, died at Needham, Mass., on Dec. 28.

William B. Dale, 90, veteran raw wool buyer and trader of Louisville, Ky., died Jan. 2. He had been connected with M. Sobel & Sons, Inc., Louisville, for 67 years and was president of the company for many years.

Cyrus T. Small, 75, for many years a leading broker in fine cotton goods in the New York market, died in Boston last month. He retired in 1940.

Russell Bowditch Beals, 71, representative of Winslow Bros. & Smith Co., Boston, at Christchurch, New Zealand, died in that city on Jan. 11.

John C. Pickett, 52, a member of the board of directors of Pickett Cotton Mills, High Point, N. C., died Jan. 13.

Roger Williams, 68, treasurer and director of Draper Bros. Co., Canton, Mass., died Dec. 14. In 1895 he entered the business, founded by his grandfather, after graduation from M. I. T.

T. M. Kirkpatrick, 72, a mechanical engineer for Marshall Field & Co., in Leaksville, N. C., died recently.

Henry P. Washburn, 52, for the last 35 years connected with the Grinnell Co., Charlotte, N. C., died Jan. 16.

Erle L. McMurtrie, of Gavigan & McMurtrie, New York, died recently.

Florence T. Helmer, for ten years manager of the advertising division of Sylvania Industrial Corp., New York, died recently. Before joining Sylvania she was treasurer of the Newton Falls Paper Co. for a number of years.

Gilmore G. Dietrich, 50, general superintendent of United Hosiery Mills, Chattanooga, Tenn., died recently. He joined the plant as foreman in 1924.

Cliff Ingram, 53, head cotton buyer for Moultrie (Ga.) Cotton Mills for 10 years, died recently.

Morton J. Reed, 56, who purchased the mill supply plant of O. V. Hooker & Son in St. Johnsbury, Vt., in 1926, and had since operated it under the name of Reed Supply Co., died recently.

Harry Cornelius Beumer, 46, of American Enka Corp., Enka, N. C., died recently. Mr. Beumer was librarian and Dutch school teacher at mill village.

Frank Waterworth, 63, who was overseer of dressing at the Ayer Mill of the American Woolen Co., Lawrence, Mass., from the time it opened up until his final illness, died last month.

Eugene C. Hamlett, 63, superintendent of the Manville Mill of Manville-Jenckes Corp., Woonsocket, R. I., for the last 20 years, died last month. He had been with the corporation for 41 years.

Walter S. Mory, 42, a supervisor in the acetate rayon plant of the E. I. du Pont de Nemours & Co., Waynesboro, Va., died at his home in Kenmore, Va., recently.

George L. Meacham, 61, first superintendent of the old Diamond Cotton Mill when it opened in East Salisbury, N. C., died Jan. 2 in Salisbury.

AN EXPLANATION

. . . that needs no apology!

To all our friends who have been unable to secure Nacconol NR readily during the past few months, we feel that an explanation is due!

Nacconol NR — the leading synthetic organic detergent — is being used in ever-increasing quantities by both the Army and Navy:

In Salt Water Soap (replacing cocoanut oil types)
For Army Mobile Laundries
In Camouflage Paints
In Synthetic Rubber and Explosives,
and in other vital war necessities.

Nacconol NR production has been increased many fold and we are doing everything possible to meet the unprecedented demand. Meanwhile, we ask that you bear with us if we are unable to take care of your needs as promptly as heretofore.

Like many other products, Nacconol NR has "gone to war" in a big way to help hasten the day of complete and final Victory!

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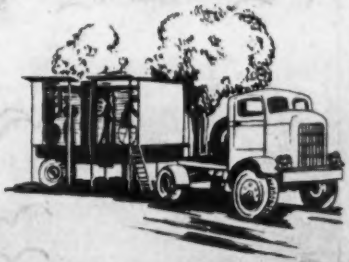
CAMOUFLAGE AND EXPLOSIVES



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TEXTILE MILL NEWS

Cotton Mill News

Bodell Lace Co., Pawtucket, R. I., has awarded contract to the Henry M. Soule Co., for a small addition to its plant on Lee Street. Work is now underway.

Chester (Pa.) **Lace Mills** are said to be arranging to convert part of mill for production of netting and other textile products for war service.

Lionel Friedmann & Co., representing Clarence L. Meyers & Co., yarn dealers, Philadelphia, Pa., have leased for a term of years the property at the southeast corner of 2nd and Somerset Sts., Philadelphia, Pa., owned by Harold McCalla Co.

Fulton Bag & Cotton Mills, Atlanta, Ga., has awarded contract for erection of a one-story addition to be used for warehouse.

Greenville, S. C. The old Pelham mill building on the eastern edge of Greenville County used now as a warehouse was destroyed by fire on Jan. 16. Estimates of the loss, involving cotton, cotton waste, and hosiery ran as high as $300,000.

Hathaway Mfg. Co., New Bedford, Mass., reports net profit after depreciation and taxes for fiscal year ended Oct. 3, 1942 of $378,497, compared with $259,287 the previous year.

Highland Mills, Griffin, Ga., was damaged by a tornado on Jan. 18. The roof and top floor of the mill was badly damaged and the mill village suffered considerable loss.

International Lace Mfg. Co., Gouverneur, N. Y., is converting part of machinery at mill for production of a new seine-type netting, to be used for camouflage service by armed forces, for which company has secured contract from Government. The mill, it is said, will discontinue manufacture of civilian laces, etc., for duration.

Monadnock Mills, Claremont, N. H., one of the first cotton mills to install jacquard looms in the 70's, has been sold to the United-Carr Fastener Corp., Cambridge and Newton, Mass. The Monadnock Mills, which ceased operations 10 years ago, were started in 1846 and specialized in the manufacture of bedspreads. Some of the real estate belonging to the corporation had been sold.

Riverside & Dan River Cotton Mills, Danville, Va., is giving employment to women loomfixers, replacing men who have joined the armed forces. The women employees have been put through a course of training at company school operated for this purpose.

Shackelford Co., Kinston, N. C., newly established mill, is now operating full time on a camouflage netting contract for the armed forces.

Sunspun Chenilles, Inc., Asheboro, N. C., has been purchased by J. M. Schloss of Asheboro, and Paul C. Brockman, of New York. They would continue operations of the plant as a partnership, with Mr. Schloss as resident manager, and Mr. Brockman as selling agent.

Wool Mill News

American Felt Co., Glenville, Conn., has begun erection of two one-story additions for warehouse and cafeteria service, respectively, for which general contract was let recently to Mertz Co., Port Chester, N. Y. No estimate of cost has been announced.

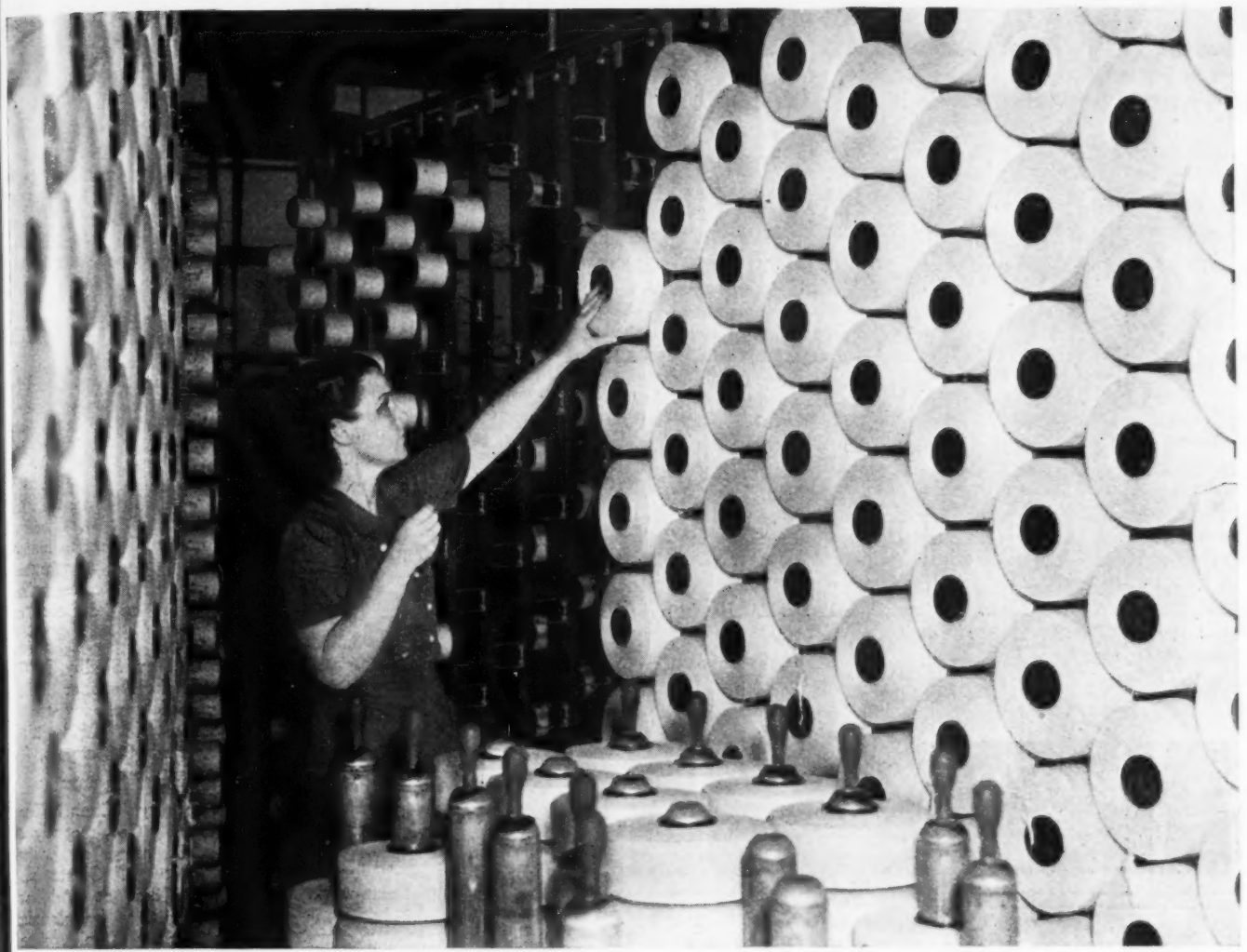
Barbour Blanket & Woolen Mills, Philippi, W. Va., was destroyed by fire Jan. 8. O. S. Taylor, manager, estimated the loss at $100,000.

Joyce Mfg. Co., Inc., 127 South Market St., Chicago, Ill., recently chartered with capital of $20,000, plans operation of local mill for the production of felt products of various kinds. New company is headed by N. and S. Citron.

Swift River Woolen Co., Stafford, Conn., suffered fire damage to its plant of almost $100,000 on Dec. 28. The blaze broke out near the boiler room and fire departments from 7 towns were called. The owners made repairs at once, and operations were resumed within 10 days. The company awarded general contract to Joseph J. Mottes Co., Westford Ave., Stafford, for rebuilding of portion of two-story mill.

Sanford (Me.) **Mills** had indicated earnings for fiscal year ended Nov. 30, 1942 of $617,891 compared with $856,011 in previous year.

Waterford (Conn.) **Woolen Co., Inc.,** is considering early rebuilding of portion of mill re-



The Creel that Turns Itself Inside Out

UNIQUE design of the Creel on the Barber-Colman Super-Speed Warper is one of several reasons why change time between warps is reduced to a minimum. This creel is made with traversable banks of cheese holders so that it can be loaded on the inside of the frame at the same time that a beam is being run from the cheeses on the outside. When the running beam is finished, the loaded banks are traversed to the outside and a new beam is starting to run within approximately 15 minutes after the previous beam was doffed. Features like this, which contribute to efficiency in obtaining high production, are important at any time — but especially so these days, when war goods are in urgent demand. Mills with Barber-Colman equipment are fortunately situated to keep up with today's high standards and demands on quality and volume requirements.

For Example . . .

The following production figures show results being obtained in a prominent mill running medium counts for two-ply twills used in uniforms and other similar military cotton goods.

Count	20s
Ends on Beam	396
Yards per Beam	20,000
Net Wgt. of Full Beam,	470 lbs.
Beams per Warper per 24-hour Day	28

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

LEWIS AIR LIFT

for use on

FOLDING MACHINES

WITH WOMEN increasingly replacing men as folding machine operators, textile mills and finishing plants are faced with the problem of making their mechanical equipment easier to operate, as well as keeping it at top-notch efficiency to meet the present challenge of production.

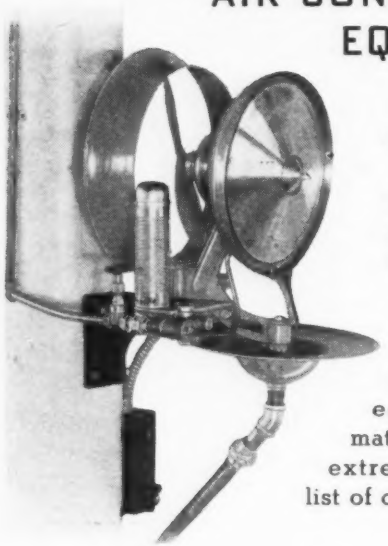
The Lewis Pneumatic Table-Lift eliminates the conventional foot treadle and the heavy work of raising the folding machine table by foot. This is especially hard on folders of larger than 4 or 5 inch capacity.

This Lift is operated by compressed air, usually available in mills and finishing plants—where not available a compressor can be supplied.

Ask Us More About It!

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS.

Your BAHNSON
AIR CONDITIONING EQUIPMENT



will last a long time

The original price you paid for low cost operating efficiency will go on paying dividends in long life, tho our new equipment and the materials we use, rank extremely high on the list of critical war needs.

HIGH CAPACITY UNIT
TYPE H
OPEN HEAD HUMIDIFIER

On repairs and maintenance, we are prepared to give **SERVICE** right on back to installations made twenty-five years ago.

Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

cently destroyed by fire with loss estimated in excess of $60,000, with equipment.

Wilton Woolen Co., 702 New Center Bldg., Detroit, Mich., recently incorporated with capital of $400,000, plans operation of a mill in this vicinity. New company is headed by Edward J. Ewing, 18910 Birchcrest St., Detroit.

Rayon & Silk Mills

Aberdeen Fabrics Co., Inc., Paterson, N. J., has been organized with capital of $125,000, to operate a local mill for production of rayon fabrics. New company is represented by Morris Biber, Paterson, attorney.

Burlington Mills Corp. reports net profit after depreciation and taxes for fiscal year ended Sept. 26, 1942 of $3,372,388 compared with $3,373,558 in previous year. Gross volume was $83,096,802 against $63,165,310. Allowance for taxes was $7,958,876 against $1,896,679.

Cleveland Cloth Mills, Shelby, N. C., has constructed an addition 19x19 ft. to provide space for the office, which has become crowded due to the heavy amount of war work.

Southampton Textile Mill, Emporia, Va., a subsidiary of the Northampton Textile Mills, of Mount Holly, N. J., was considerably damaged by fire Jan. 7, which started in a loom.

Knitting Mill News

American Hosiery, Inc., New Britain, Conn., organized in 1868, will soon end its corporate existence, as stockholders approved liquidation plans.

Belmont (N. C.) **Hosiery Mills** late in January, 1943, established a looping department for the company's mills in a building on Highway 74, five miles from Shelby, N. C.

Cape Hickory Mill, Hickory, N. C., has been organized by Clyde Martin and F. O. Childers to make men's hose in the gray on 25 H-H machines. Mr. Childers operates the Childers Hosiery Mill, near Icard, N. C., which will finish the hosiery. Mr. Martin, formerly operator of the Cape Hickory Tavern, in the building of which the new plant will be set up, will be in charge.

Carlton Hosiery Mills, Inc., Hackensack, N. J., care of George Winn, 210 Main St., Hackensack, attorney and representative, recently chartered with capital of 100 shares of stock, plan operation of a knitting mill in that vicinity.

Char-Mode Knitting Mills, Inc., New York, N. Y., care of Daniel Kavitt, 217 Broadway, New York, attorney and representative, recently chartered with capital of $10,000, plan early operation of a mill.

Elmira (N. Y.) **Knitting Mills** have acquired certain machinery formerly used at the plant of Amazon Knitting Co., Muskegon, Mich., now being liquidated, and will remove to mill at Elmira Heights, where increased operations will be carried out.

Empire Knitting Mills Corp., Statesville, N. C., is a newly organized plant to manufacture and produce knitted fabrics. The new concern has an authorized capital stock of 1,000 shares.

C. E. Foster, Shelby, N. C., has leased the Gardner Building, Southdale and Arey streets, and has installed 16 knitting machines and 40 loopers, for the manufacture of hosiery.

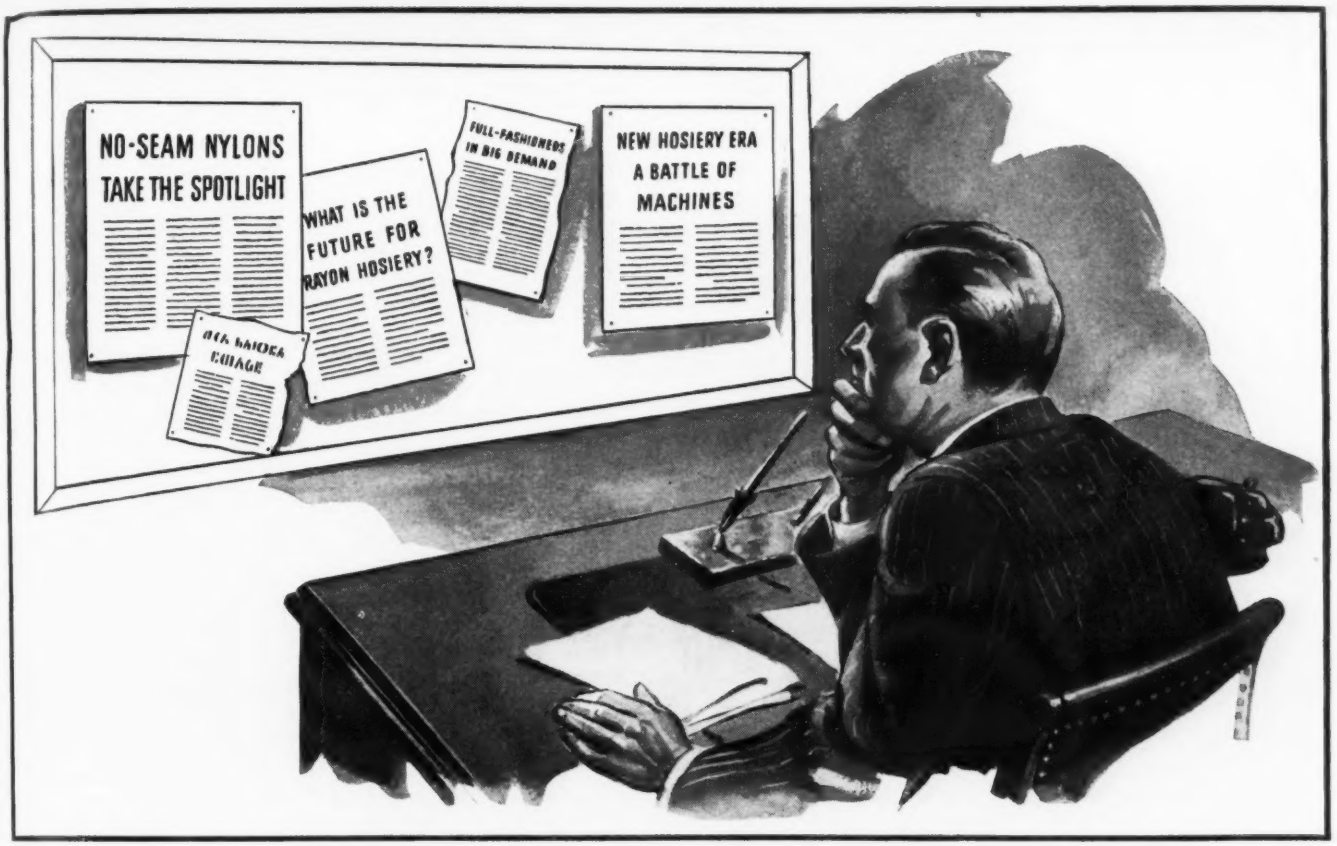
Glastonbury (Conn.) **Textile & Realty Co.,** recently organized, now owner of the former property of Glastonbury Knitting Mills at Addison, Conn., is said to be planning early reopening of mill, closed for some time, for the manufacture of knit underwear and other knit goods, as manufactured previously at the plant.

Glenn Holt Hosiery Mill, Inc., Yanceyville, N. C., has been organized with capital of $40,000, to manufacture hosiery for women. A. Glenn Holt, president, Caswell Knitting Mills, Yanceyville, is head of new company, which, it is said, will operate a local plant.

Gotham Hosiery Co., New York, N. Y., has sold its former knitting mill and factory site property at Dover, N. J., to the Roger Trust Co., Dover, which, in turn, has leased the plant to McGregor Mfg. Co., New York, N. Y., manufacturer of sportswear.

Herbert Hosiery Mills, Inc., Norristown, Pa., has taken over part of former Eagle Silk Mill property at Shamokin, Pa., and will modernize and equip at early date for new branch mill. Machinery and facilities will be provided for initial working force of about 50 persons.

Laconia, N. H. The former G. H. Tilton & Sons mills in Laconia, have been purchased by Walter F. Duffy, president of


NO-SEAM NYLONS TAKE THE SPOTLIGHT
WHAT IS THE FUTURE FOR RAYON HOSIERY?
FULL-FASHIONED IN BIG DEMAND
NEW HOSIERY ERA A BATTLE OF MACHINES

WHAT WILL THE HOSIERY BUSINESS BE LIKE

AFTER THE DURATION?

This much is certain . . . the hosiery business will not go back to pick up where it left off. Once having sampled what amazing new yarns and ingenious new manufacturing techniques can deliver, consumers will most certainly exercise new purchasing discrimination for the products of these precedent-shattering innovations.

We in the hosiery industry have been fortunate indeed in having had this indication of trends our post-war business is likely to follow. Although both the new developments just prior to the war and the further improvements which have been made during the past year have been temporarily "filed" out of wartime necessity, they are certain to create new style appeal and consumer demand . . . and they will set up future competition on a scale far keener and more intense than we have ever known. With this in mind, far-sighted mill men are already perfecting plans for post-war operations along lines that will assure widespread acceptance and demand for the products of their mills.

And the most immediate concern is the type of knitting equipment that will be needed. For without the *right* knitting machines no manufacturer can expect to keep in the running *after* the duration.

Are you considering this question now in planning your program of future action? Here at Scott & Williams, we are planning in terms of the knitting machines that you will need to do this job. Our thinking . . . and planning . . . may suggest a practical answer to your problem. We will welcome the opportunity to talk it over with you.

The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point offices.

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Prompt Shipment from 10 Strategically-Located Steel-Service Plants... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Detroit, Buffalo, Cincinnati, Cleveland, Boston, Philadelphia, Jersey City.

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GREENVILLE SOUTH CAROLINA
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NOVELTY-YARNS
For
WEAVERS-KNITTERS
MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

Belmont (N. H.) Hosiery Co. from the estate of the late State Atty. Gen. Thomas P. Cheney.

Mechanicville (N. Y.) Knitting Co. has discontinued operations permanently and has disposed of its complete mill machinery and equipment to A. Schaap & Sons, New York.

E. Richard Meinig Co., Reading, Pa., have completed the equipping of a new department for the manufacture of men's wool gloves for the Army QM.

Mock, Judson, Voehringer, Inc., Greensboro, N. C., which has been operating the Siler City (N. C.) Silk Co., in a building under lease, has purchased the building and other property from the Chatham Industries, Inc.

Modern Miltex Corp., 60 East 39th St., New York, N. Y., manufacturer of knit goods, has leased space in building at 49-53 West 38th St., and will operate plant at that location in future, removing machinery and equipment from first-mentioned address.

Mount Airy (N. C.) Knitting Co. will install additional equipment at mill, secured through recent purchase from plant of Amazon Knitting Co., Muskegon, Mich., in liquidation.

Union Underwear Co., Inc., 93 Worth St., New York, N. Y., has purchased 25 knitting machines and number of sewing machines, with auxiliary equipment, heretofore in service at plant of Amazon Knitting Co., Muskegon, Mich., now being liquidated, and plans early removal to a mill in Pennsylvania, location not announced.

Processing Plant News

Cook Yarn Dye Mills, Inc., East Providence, R. I., recently incorporated with capital of $150,000, plans early operation of a local dyeing and finishing mill. Walter I. Cook, Rumford, R. I., and Henry J. Blais, Jr., East Providence, are heads.

Garnerville Dye Works, Inc., West Haverstraw, N. Y., recently organized with capital of $40,000, plans early operation of local dye, print and finishing mill. New company is represented by Samuel Miller, Haverstraw, N. Y., attorney.

Glenlyon Yarn & Dye Works, Phillipsdale, R. I., which has been a part of the Sayles Finishing Plants, Inc., and operated under the Sayles organization for about 30 years, has been acquired by the Cook Yarn Dye Mills, Inc., and is now being operated under this management. Walter I. Cook, who has been in charge for many years, is president and treasurer. There are about 200 employees. This material was published last month, but incorrect location of plant was given.

Pilgrim Processing Corp., Brooklyn, N. Y., care of Levin, Rosmarin & Schwartz, 1 Madison Ave., New York, N. Y., attorneys and representatives, has been chartered with capital of 200 shares of stock, no par value, to operate a local dye and bleach mill. Production will begin soon.

Miscellaneous Mill News

Capitol City Mattress Co., Nashville, Tenn., manufacturer of mattresses, bedding, etc., plans new one-story addition, reported to cost close to $25,000, with equipment.

Commodity Credit Corp., Washington, D. C., has awarded general contract to Mason & Hanger Co., Lexington, Ky., for new Government-owned hemp-processing mill on Winchester Pike, near Lexington, at price of $134,000, exclusive of equipment. It will be located on tract of about 58 acres, and comprise several units, with boiler house and auxiliary structures. Work will begin at once. Entire project will cost close to $350,000, with machinery. Commodity Credit Corp. has received low bid at $148,440 from Mason & Hanger Co. for erection of hemp-processing mill near Polo, Ill., and contract is scheduled to be awarded at early date. This plant will consist of several units, with boiler house and auxiliary structures, totaling about 300,000 sq. ft. of floor space, and is estimated to cost about $350,000, with equipment. Commodity Credit Corp. has preliminary plans for a hemp-processing mill in vicinity of DeForest (Dane County), Wis., comprising several one-story buildings, with power house and auxiliary structures, reported to cost close to $300,000, including equipment.

Sealy Mattress Co., Pittsburgh, Pa., has completed installation of additional machinery and equipment in branch plant at Des Moines, Iowa, to double former capacity.

A DIFFERENT WAR? YES!

. . . and a different war presents new and difficult problems.

Uncle Sam's fighting men in the jungle, in the Arctic, on the desert - - all over the world - - are demanding fabrics finished to meet the extreme conditions of this *new* kind of war. ● Arkansas' vast peacetime experience is now solving wartime problems . . producing for textile processing and finishing plants products that meet exacting government specifications.

FRONT LINE PRODUCTS

FUNGICIDE G For mildewproofing all types of cotton cloth used in sleeping bags, webbing, tentage, mosquito netting, etc.

ARKO FIRE RETARDANT For flame-proofing uniform cloth, tentage, felts, etc.

CULOFIX L* For preventing color-bleed in water of direct dyed cotton.

AQUAROL* Produces a water-repellent finish on uniform cloth, overcoatings, and other military fabrics . . used in a single bath treatment with Fungicide G to impart water-repellency and mildew resistance . . used in a single bath treatment with Arko Fire Retardant to produce water-repellency and fire-resistance.

*REG. U.S. PAT. OFF.

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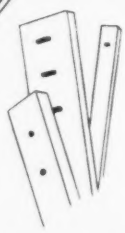
STRAPPING

A New Development from the plastic and chemical industries. A scientific product of absolute uniformity and controlled strength (30% stronger than Ton-Tex Strapping.) Using no critical materials, the supply is dependable and adequate. Its practical advantages have been thoroughly tested and proven superior. Our experts will gladly arrange complete tests to meet your particular requirements.



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ANY LENGTH
ANY THICKNESS
ANY PUNCHING

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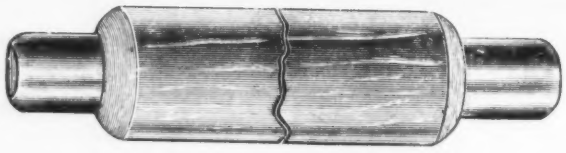
Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE



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Since 1900 we have made high quality true-form oven-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirement. Write

FRANK BAILEY **Cedar Brook, N. J.**

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Dyeing of OD. denim is discussed in a recent bulletin, No. 666, titled "Dyeing of OD Denim for Barracks Bags," and released by Calco Chemical Division of American Cyanamid Co. This bulletin contains much information on the dyeing of government procurements and gives dyeing and finishing procedure on specification PQD No. 142.

Personal responsibility for care and maintenance of machinery is discussed in the December issue of *The Clothroom Spotlight*, published by Hermas Machine Co.

Inspection of card clothing and early detection of trouble is stressed in the December issue of *The Howard Way*, published by Howard Bros. Mfg. Co., as a means of avoiding costly shut-downs which are sometimes caused in wartime through the inability to obtain immediate delivery on clothing.

The awarding to the Maritime "M" pennant is described in the November issue of *The Whitin Review*, published by Whitin Machine Works. The Review also contains a brief but interesting historical sketch of the development of this company.

"Parachute Troops," is the title of an article contained in the December issue of *Texrope Topics*, published by Allis-Chalmers Mfg. Co. This interesting article points out the importance of cotton and Nylon in the construction of parachutes.

WPB Conservation Order L-134 setting limits on the use of chromium and nickel, and its relation to industrial instruments as used by the textile industry and other industries, is described in the November-December 1942 issue of *Wheelco Comments*, which is published by the Wheelco Instrument Co.

Factors affecting the service life of stainless steel equipment are discussed in the January issue of *Rayon Warp Sizing Specialist*, published by Charles B. Johnson Machine Works. Also contained in the same issue is an interesting announcement concerning distinct fields of new fibers.

Fluorescent lighting units for utilization with fluorescent lamps are described and listed in Catalog Sheet L-78 issued by The Edwin F. Guth Co. Masonite reflectors and non-metallic shielding are used, thus the unit is constructed almost entirely with material not on the priority list.

Plastics are covered in a booklet entitled, "Designing Molded Plastics Parts," and issued by General Electric Plastics Department. This booklet contains valuable information on various phases covering the designing of molded plastic parts and such subjects as insertions, shrinkage, tolerances, wall thicknesses, etc.

Humidification in the textile industry is discussed in a bulletin entitled, "Armstrong Humidifiers in Industry," offered by Armstrong Machine Works. Installations in various types of textile mills, such as cotton mills, woolen mills and rayon weaving plants are mentioned.

Water filters of the pressure special type are covered in a bulletin issued by Graver Tank & Mfg. Co. Construction features are discussed and numerous installations are illustrated in the publication.

The stroboscope and its industrial uses are discussed in a 25-page booklet issued by General Radio Co. This booklet entitled, "Eyes for Industry," explains how qualitative and quantitative maintenance may be had with a stroboscope and illustrates many typical uses. Several excellent examples of the use of the stroboscope in textile mills are also shown in the booklet.

Textile manufacturers engaged in war work will find worth-while information in a

Caustic Soda

PROMPT SHIPMENTS

QUICK HANDLING

Penn Salt Liquid Caustic Soda is shipped in tank cars specially designed for speedier, safer unloading. These modern 8000-gallon tank cars have a protective lining, are insulated and are equipped with caustic resistant valves and interior fittings. They can be quickly and completely emptied—no wasted caustic, no lost time.

Penn Salt Caustic Soda is supplied as 50% and 72-73% solutions in tank car quantities; as a solid in 750 lb. drums; or in flake form in 400 lb. and 125 lb. drums.

Our technical staff is at your service for help with handling problems. Write for complete information. Pennsylvania Salt Manufacturing Company, 1000 Widener Building, Philadelphia, Pa. Branch Offices: New York • Chicago • St. Louis • Pittsburgh • Wyandotte • Tacoma.

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Specializing in Mildew Proofing, Flame Proofing, Water Proofing of Textile Fabrics.

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booklet entitled "How to Pack War Materials," published by Hinde & Dauch Paper Co. This booklet illustrates and describes corrugated boxes designed to accommodate multiple unit shipments, corrugated boxes designed to facilitate packing and later use on assembly lines, and corrugated boxes designed to protect irregular shaped objects that must be packed in a compact area.

Wax fortified paints are described and their industrial uses set forth in a bulletin issued by S. B. Johnson & Son, Inc.

Short center drives with pivoted motor mounts and suitable for either V-belt installations or flat belt drives are covered in catalog ED-42 that is now being distributed by American Pulley Co.

Temperature controllers utilizing the electronic principle are covered in bulletin Z-6100, issued by Wheelco Instruments Co. The electronic principle control permits the registration of temperature without contact between measuring and control functions of an instrument.

A rubber selector chart is being offered by The British Rubber Publicity Association. This chart lists types of rubber that should be used in industrial installations and the properties of rubber intended for each purpose.

Plywood and its multiple uses are discussed in two new loose-leaf hand-books issued by Douglas Fir Plywood Association. One handbook entitled "Technical Data on Plywood," lists properties, while the other handbook entitled "Industrial Uses of Plywood," points out various industrial installations that may be made, some of which may be adaptable to textile mills.

Standard steels of the American Iron and Steel Institute and the Society of Automotive Engineers have been listed on a data card that is being offered by Babcock & Wilcox Tube Co.

Sizing with starch solublizing is covered, along with 30 size formulae, in a folder issued by Aktivin Corp.

Wooden partitions easily erected to take care of office and industrial expansion due to wartime activity are described in a folder offered by Mills Co.

Hot process water softeners are discussed in a booklet issued by Graver Tank & Mfg. Co., Inc. Many useful tables and charts are included in this booklet, such as calcium carbonate equivalent weight factor, table of degrees of hardness, ionic conversion factors, conversion table for hardness and a chart showing the solubility of oxygen in water at various temperatures.

Textile mills officials will be interested in a booklet issued by General Electric Co., GES-3039, which describes how industrial plants can increase power capacity quickly, and at the same time save large quantities of critical materials.

Drying with infra-red rays is discussed in a booklet titled, "The Near Infra-Red Process," and offered by Fostoria Pressed Steel Corp. Several photographs showing installation of the near infra-red process for drying textiles are contained in this booklet. Mill men may be interested in reviewing a list appearing in the booklet stating the possible installations for such equipment in the textile industry.

Textile engineers and maintenance men will be interested in a new power transmission and equipment catalog, No. 42, recently issued by Dodge Mfg. Corp. This 392 page catalog covers shafting, bearings, drives, gearing, conveyor lines, etc. A section of over 60 pages is devoted to engineering data such as tables, charts, formulas, etc., covering power transmission equipment. Requests must be made on mill letterheads.

Care of spinning rings are discussed in the December issue, *Saco-Lowell Bulletin*, published by Saco-Lowell Shops. Suggestions covering the care of card clothing are also offered as card clothing is one of the items that are difficult to obtain under wartime conditions.

Heating and ventilating equipment with combination forced air in black-out control units suitable for textile mills and industrial plants that are blacked out, is discussed in a folder offered by Young Radiator Co.

Electric control by means of controllers and recording and indicating instruments is discussed in great detail in a 28-page catalog N-00A issued by Leeds & Northrup Co.

Lubrication by means of portable power and lubrication units are discussed in a folder issued by Alemite, a division of Stewart-Warner Corp.

Here is useful information on ETHOCEL properties

TOUGHNESS

TOUGHNESS

RESISTANCE TO HEAT

STABILITY TO LIGHT

LOW SPECIFIC GRAVITY

COMPATIBILITY WITH MOST PLASTICIZERS AND RESINS

LOW FLAMMABILITY

SOLUBILITY IN LOW COST SOLVENTS

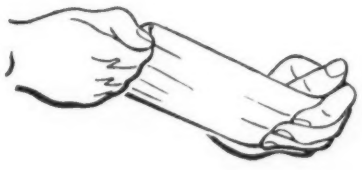
FLEXIBILITY AT LOW TEMPERATURES

One of the unique characteristics of ETHOCEL coatings is that, unlike other coating materials, they not only possess toughness at ordinary temperatures, but retain this toughness over a wide temperature range. An ETHOCEL coating, which is tough and durable at temperatures between 70° and 180° F, is also resistant to deformation and cold check at temperatures well below zero. Certain ETHOCEL coatings have been observed to possess unusual resistance to impact at temperatures even as low as —60° F.

It is this inherent toughness which makes ETHOCEL coatings valuable for a wide variety of uses in which ordinary bases would not be suitable. ETHOCEL coatings can be formulated to withstand a great number of cold check test cycles, where the temperature range varies from 180° F to that of dry ice.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

New York • St. Louis • Chicago • Houston • San Francisco
Los Angeles • Seattle



ETHOCEL

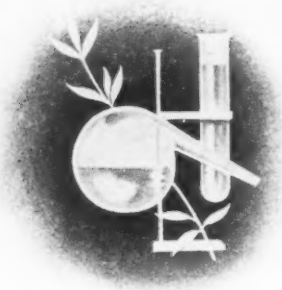
(DOW ETHYLCELLULOSE)

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY

THE DYESTUFF SITUATION

Yesterday...



Today...

Twenty-five years ago the need for color was urgent. European sources of supply had been shut off and America's textile industry was threatened with a desperate situation unless it could get dyes quickly.

This brought about the birth of a new American industry—dyestuffs. It was little realized at the time how vital a part this infant was to play in the American scheme of living. The early struggles of the newcomer to survive were many. During its weakest years the textile industry fostered the infant, assisting in its development through helpful advice and guidance. It aided the dyestuffs industry in establishing products for which the need was greatest and by accepting these products it gave the necessary impetus to further research and planning.

The colors first manufactured left much to be desired, but textile mills were patient. They cooperated wholeheartedly and only a few years elapsed before manufacturers were turning out dyestuffs of highest quality, satisfactorily fulfilling requirements. The youthful industry kept growing—ever stronger—making an increasingly broader range of important products. Initial production of anthraquinone and thioindigoid derivative vat colors was well received by dyers and printers and the period 1920 to 1930 represented a decade of rapid growth. Complete lines of direct, developed, sulfur and acid colors were introduced, and subsequent years witnessed further expansion in the vat color field.

Development of the organic chemicals industry was paralleled by the growth in chemical education. Many of the chemists, chemical engineers and technicians trained during this period became leaders of the industry. The future was bright, the horizons were broad, the opportunities unlimited for the betterment of existing products and the development of new ones.

World War II—the United States has at its command a complete, integrated and self-sufficient organic chemical and dyestuffs industry, supplying great quantities of vital materials essential to the war effort. Its importance to our national welfare and security is further emphasized through its contribution of highly trained chemical engineering and technical personnel to the many chemical, munitions and powder plants necessary to carry on a global war.

The dyestuffs industry is supplying the armed forces with the fastest colors available which meet the rigid requirements for durability and service. In addition, there are over 1200 colors available for use in the manufacture of permissible and essential civilian textiles, paper, leather, paint, rubber and other products. Other important contributions to the nation's economy resulting from research in the dyestuffs field are neoprene chloroprene rubber, synthetic camphor, pharmaceutical chemicals, refrigerants and air conditioning chemicals, tetraethyl lead, textile and dyeing assistants, and water repellents.

The infant industry has reached maturity, shouldering its burden well. As far as chemicals and dyes are concerned, this country need no longer fear the consequences of isolation. This has been proved by the events of the past 12 months. Substitutions may occasionally be necessary because of priorities, allocations and other wartime contingencies but the dyestuff industry will do its utmost to satisfy all demands for colors. Du Pont is proud of the part it has played in the growth and development of the American dyestuffs industry. When the world is again at peace, lessons of the last thirty years will have served to give America—*Better Things for Better Living... through Chemistry.*

DU PONT DYESTUFFS
REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO. (INC.) ORGANIC CHEMICALS DEPARTMENT, DYESTUFFS DIVISION
WILMINGTON, DELAWARE

DOUBLE TROUBLE FOR OUR FOES

machine is a doubler, and Gertrude Salois is now mak-
it serve a double purpose.

She's doing her very utmost to keep our fighters sup-
d with Pacific worsteds and woolens.

At the same time she's helping to turn materials not required for military use into fabrics for civilians to wear.

The double effort has no terrors for Gertrude—nor for any other worker at Pacific.

Since our country was plunged into war, we've never let up— and we'll never let up till victory's here!

Through these stormy times, Pacific's standards of quality ride high as ever

PACIFIC MILLS

140 Federal Street, Boston • 214 Church Street, New York • Worsted Division, 261 Fifth Avenue, New York
Mills at Lyman, S. C., Columbia, S. C., Lawrence, Mass.

This material is a
SAYLERIZED
PERMANENT FINISH
fabric
It will retain its original freshness and distinctive beauty
It will not lint, fuzz or become limp or lifeless. The freshness, beauty and lustre will endure thru repeated launderings.
SAYLES FINISHING PLANTS, Inc.
Established 1847
Saylesville, R. I.

Cotton

the oldest NEW fabric

Modernized by SAYLERIZED Permanent Finish

REG. U. S. PAT. OFF.

Cotton is one of the world's oldest fabrics. Yet SAYLERIZED Permanent Finishes set quality standards of cotton freshness, beauty and utility that are new to many markets.

Muslins, Percales, Batistes
Poplins, Organdies

White, Dyed, Printed

SAYLERIZED cottons have staying power consumers appreciate — will not lint or fuzz, but retain beauty of texture and freshness through repeated washings. Our guaranty tag is a recognized sales-builder.

"Cotton for Freshness"

SAYLES FINISHING PLANTS, INC.

ESTABLISHED 1847 SAYLESVILLE, R. I.
NEW YORK OFFICE: 72 LEONARD ST., NEW YORK CITY

SAYL-A-SHRUNK finish, assuring stability of dimensions, can also be applied to fabrics receiving the SAYLERIZED Permanent Finish.

The RESISTLESS CURRENT

From Niagara's resistless current comes the vast energy that has made the region about the Falls one of America's great sources of hydro-electric power. Yet the attraction of Niagara for Americans lies as much in its beauty as in its utility. We have harnessed its power but we have also enshrined its splendor as an expression of the natural resources from which we gain spiritual as well as material strength.

We in America have always been close to nature. Our struggle has been more than a struggle for political freedom; it has also been a struggle for mastery of a wilderness. And here in Niagara's rugged grandeur is an epitome of the primeval forces that have helped to mold our national character. In contact with rivers and mountains and prairies we have learned the basic rules of give-and-take by which men may live in freedom and dignity. The current of our progress has been resistless, yet fluid and adaptable—following always the channels that lead to broader fields of accomplishment.

We who work within sight and sound of Niagara Falls are devoting every ounce of our energies and facilities to speeding the flow of chemicals for Victory.

CAUSTIC POTASH · CAUSTIC SODA
PARA · CARBONATE OF POTASH
LIQUID CHLORINE

Niagara ALKALI COMPANY

60 EAST 42nd STREET, NEW YORK, N. Y.

An Essential Part Of America's Great Chemical Enterprise

★ ★ ★ ★

STALEY'S

Complete Line of UNMODIFIED and MODIFIED

TEXTILE STARCHES

100% LABORATORY CONTROLLED

★ QUALITY

★ UNIFORMITY

★ DEPENDABILITY

TODAY as in World War 1

SERVING the TEXTILE INDUSTRY

A. E. STALEY MANUFACTURING COMPANY

DECATUR

Staley's CORN AND SOY BEAN PRODUCTS

ILLINOIS

ATLANTA, NEW YORK CITY, SPARTANBURG, CHICAGO, BOSTON

OSCAR HEINEMAN CORPORATION

Throwsters for the Hosiery Trade

(for over forty years)

Our R/50 Special Avconit Process for high twist Rayons has stood the acid test.

Leading manufacturers are insisting on their yarns being processed the Avconit way. They have found from actual experience that Avconit when properly applied means

Increased production
Lower percentage of seconds
Less press-offs and waste
Better satisfied knitters.

We take great pride in the fact that we were pioneers in the development of Avconit Processing for high twist rayon yarns for hosiery.

For most satisfactory results in both knitting and finishing we recommend our R/50 Special Avconit Process.

2701 ARMITAGE AVENUE — CHICAGO, ILLINOIS

Aberfoyle Mfg. Co.
123 S. Broad St.
Philadelphia, Pa.

N. P. Murphy
813 Guilford Bldg.
Greensboro, N. C.

C. D. Gott Co.
3303 Brainerd Rd.
Chattanooga, Tenn.

Why use sulphonated castor oil when better products are available ?

Entirely aside from the question of shortages, substitutes and replacements—look at the processing problem from the standpoint of what will do the best job.

Houghton research has resulted in development of oils which actually out-perform the time-honored favorites. We can beat sulphonated castor on many counts.

SURFAX W.O.

Take, for example Surfax W.O., a concentrated wetting agent, penetrant and softening oil, widely used in wet processing of textiles. This oil has many other potential applications which are constantly widening its field of usefulness.

SOL LUSTRE

Or consider Sol Lustre, a superior softening oil, low in moisture, highly resistant to light, heat and oxidation.

These are but two of many Houghton processing oils which may suggest practical applications to you. We will be glad to work with you on tests if you will write us fully.

Here are a few uses for these superior oils . . .

Dyebath leveling
Wetting out
Sanforizing
Softening
Size Plasticizing
Emulsifying Agents
Starch Paste Thinners
Conditioning Agents

These may suggest others in your own manufacturing.

E. F. HOUGHTON & CO.

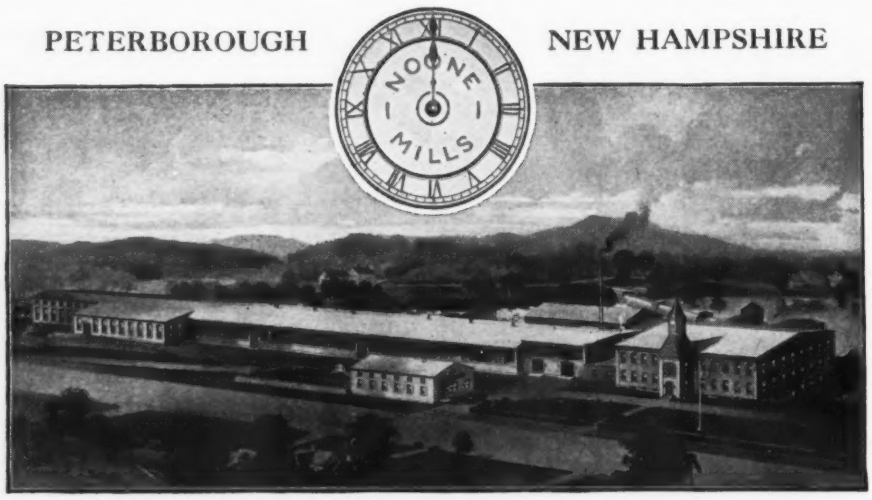
Third Street & Lehigh Avenue,
PHILADELPHIA

Factories: Philadelphia, Chicago, Detroit, San Francisco

The Joseph Noone's Sons Company

A. Erland Goyette, Owner

PETERBOROUGH NEW HAMPSHIRE



Established 1831

Noone's Standard Roller Cloths

Insist on Noone's Standard Roller Cloths for your Spinning Rolls. Noone's have been Standard since 1831.

Results and costs are what count most.

Use Noone's Roller Cloth and be assured of a Strong Round uniform yarn, the best obtainable. Eventual cost, less than any other covering.

Good spinning can always be obtained when Noone's Roller Cloth is used, as it is the properly built Cloth,—has the correct cushion and consistency, and uniform gauge.

Noone's is best by test.

Many materials have been used for Spinning Roll Covering in years past, but have eventually been discarded in favor of the dependable Woolen Roller Cloth and Leather.

Do not be misled, put your faith in the good Old American Products: Noone's Roller Cloth and Leather. If in doubt, allow us to demonstrate the superiority of our Roller Cloth and a leather cot.

Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.

Noone's are the Pioneers in Mechanical Cloth Manufacturing in America.

WILLIAM R. NOONE & COMPANY

Selling Agents

ARNOLD T. MALONE, Manager

105 Washington Street Boston, Mass

FOR PIGMENT PRINTING
and PIGMENT DYEING
in WATER SOLUTION..

SHO-PAL
THICKENER and BINDER

WASH FAST when the printed or dyed cloth is dried . . . eliminates curing.

DRY PRODUCT . . . easy to handle . . . saves shipping and storage space.

NO SOLVENT . . . does not damage rubber blankets.

ANY OTHER TYPES of COLOR can be used because the paste is made up with water.

WIDE PIGMENT CHOICE . . . you can select your pigment colors from several sources of supply.

NO STRATEGIC MATERIAL or homogenizing equipment required.

High Quality Results at Low Cost.

Prove these values for yourself.
Order a trial lot of Sho-Pal today.

STEIN, HALL MFG., CO. ★ STEIN, HALL & CO., INC. ★ STEIN, HALL, LTD.

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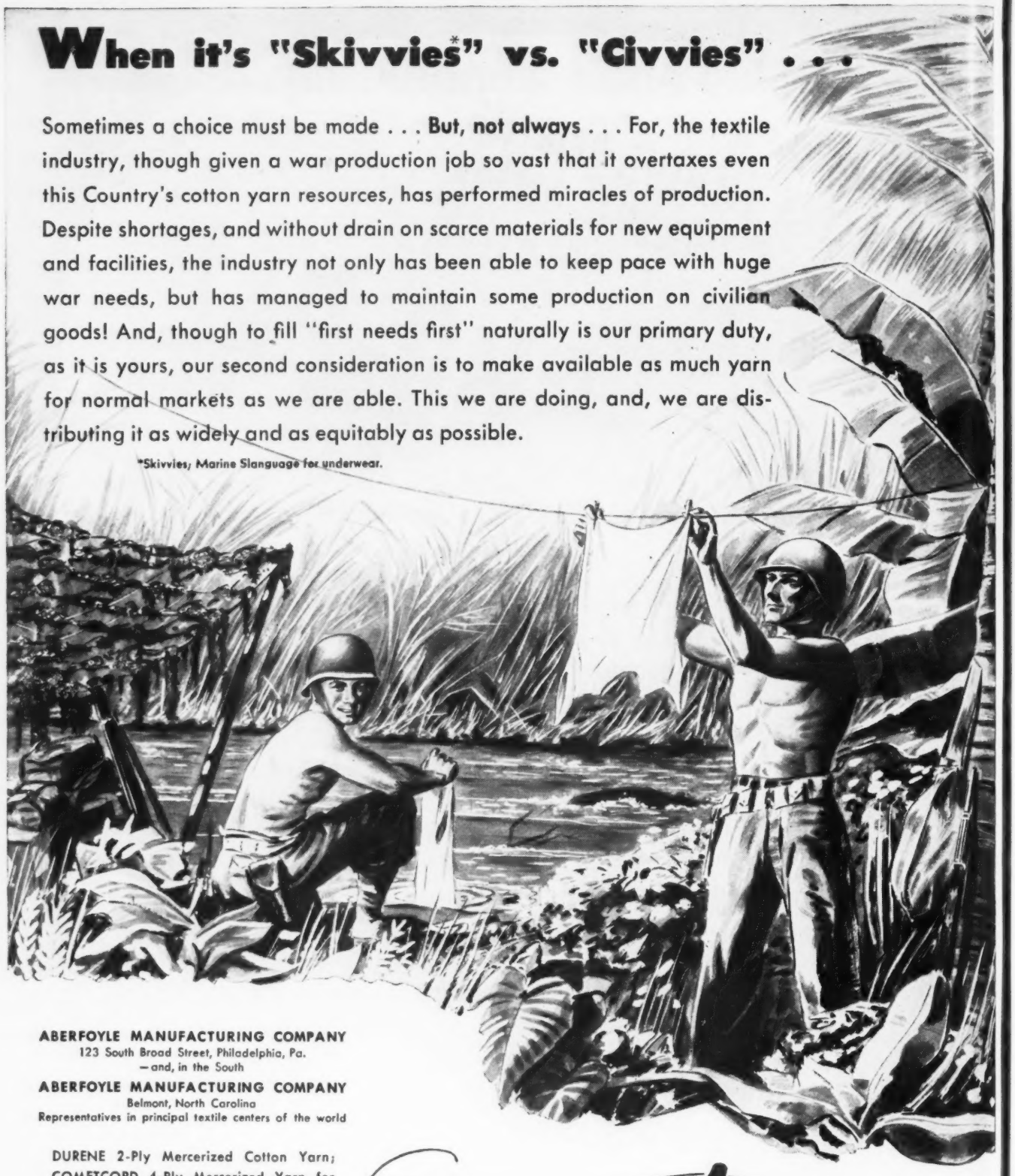
77 YEARS OF SERVICE SUPPLYING HIGH QUALITY STARCHES, GUMS AND DEXTRINES FOR SIZING, PRINTING AND FINISHING.

When it's "Skivvies*" vs. "Civvies" . . .

Sometimes a choice must be made . . . **But, not always** . . . For, the textile industry, though given a war production job so vast that it overtaxes even this Country's cotton yarn resources, has performed miracles of production. Despite shortages, and without drain on scarce materials for new equipment and facilities, the industry not only has been able to keep pace with huge war needs, but has managed to maintain some production on civilian goods! And, though to fill "first needs first" naturally is our primary duty, as it is yours, our second consideration is to make available as much yarn for normal markets as we are able. This we are doing, and, we are distributing it as widely and as equitably as possible.

*Skivvies, Marine Slanguage for underwear.



ABERFOYLE MANUFACTURING COMPANY
123 South Broad Street, Philadelphia, Pa.
—and, in the South
ABERFOYLE MANUFACTURING COMPANY
Belmont, North Carolina
Representatives in principal textile centers of the world

DURENE 2-Ply Mercerized Cotton Yarn; COMETCORD 4-Ply Mercerized Yarn for 6 x 3 Lines; S-P-Y, the Moisture-Resistant Mercerized Yarn; NEOPHIL Nylon Thread; PREFERRED BRAND Seaming and Looping Thread; ENTWIST Mercerized Cotton Yarn and Nylon Twisted Combination; WEAR-TWIST, the Domestic Mercerized Lisle; DYED YARNS.

ESTABLISHED 1883

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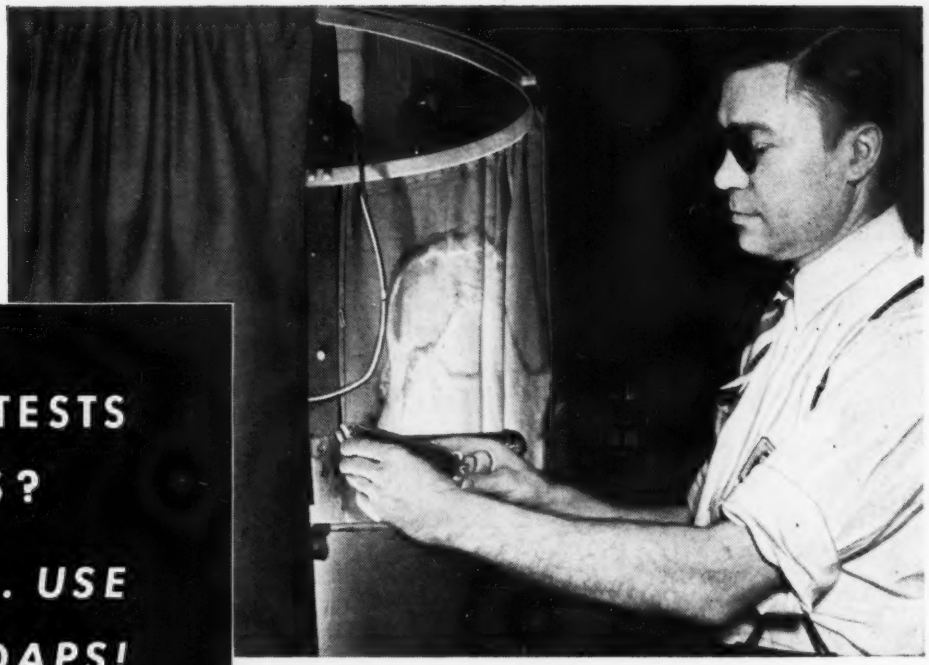
AMERICA'S OLDEST MERCERIZERS OF FINE COTTON

RIGID QM TESTS TO PASS?

BE SURE . . . USE ARMOUR SOAPS!



A grueling, punishing test in this "Weather-O-Meter" at the QM laboratory proves a fabric's ability to stand up under extreme conditions of jungle dampness and tropical sunlight. (Photo, courtesy Photo Section, Phila. Quartermaster Depot)

Whether you have QM tests to pass or critical customers to please, Armour Soaps are your sure bet for every processing and finishing job. And here's why:

1. THE RIGHT SOAP. Armour offers 12 different textile soaps with different bases and in various forms. In the list at right you will find just the soap you need —even for the new methods and new type materials being developed today.

2. DEPENDABLE. You can be sure of the superior quality, the stability, the consistent high performance of Armour Textile Soaps. They are made from carefully selected raw materials and are chemically controlled throughout their manufacture.

3. ECONOMICAL. You get more soaping action for your money with Armour Soaps because moisture content is reduced to a minimum.

Available? Yes . . . and quickly! Write, wire or phone Armour for the soaps you need. In many cases delivery can be made the very day your order is received, because Armour has 321 Branch Warehouses located throughout the country. Get in touch with your nearest Armour Branch Warehouse today!

To help you meet QM specifications, Armour offers this wide selection of fine quality soaps:

LOW TITER SOAPS

For dye leveling to achieve approved, even shade; color fastness. For thorough wool scouring, fulling to specified shrinkage and after-scouring.

CERTIFIED SOAP Vegetable fatty acid base. Available in flakes and solid form.

VERDANT SOAP Olive characteristics. In flakes, powder (neutral or built) and bar form.

TEXSCOUR SOAP Red oil base. In flakes.

RE-NU SOAP Potash soft soap.

HIGH TITER SOAPS

For scouring after vat dyeing to clean thoroughly, tone up shade. For effective scouring under high temperatures.

FLINT SOAP Tallow base. Titer 41-42° C. In chips and powder.

INDUSTRIAL SOAP Tallow base. Titer 39-40° C. In chips and powder.

ARMOUR AND COMPANY

Industrial Soap Division

1355 WEST 31st STREET • CHICAGO, ILLINOIS

321 ARMOUR BRANCH WAREHOUSES INSURE QUICK DELIVERY

IF YOU ARE RUNNING A WAR FACTORY

please accept this personal invitation

IF you are engaged in any kind of war production you are invited to make use of a free service which has already stepped up production in hundreds of factories—large and small.

Here is how it works. You simply telephone your nearest G-E lamp office, or your Electric Service Company, Electrical Jobber or Contractor. Say: "We want to do all we can to speed production. Will you have a lighting man call and see if he can help us?" The lighting man will carefully inspect your lighting, look for bottle-necks caused by glare or gloom or shadows. He'll show you how to correct those troubles—with the least possible use of critical materials.

You can't *lose* by accepting this invitation. And you may *gain* both in production and in employee morale. So won't you phone today?

TYPICAL LIGHTING TROUBLES WHICH HOLD BACK PRODUCTION

1. GLARE—from bare bulbs or wrongly placed fixtures. You may not realize how this is holding back your production.

2. SHADOWS—sometimes a worker's own shadow slows up his work. Moving a light fixture often removes this hazard.

3. GLOOM—dirt and grease on bulbs and reflectors can cut out *half* your light—and slow down production accordingly. Soap and water work wonders.

For wartime lighting help . . . Phone one of these G-E lamp numbers or your Electric Service Company or G-E lamp supplier

ATLANTA.....**WAlnut 9767**
Red Rock Bldg.

BOSTON.....**HAncock 1680**
United Shoe Machinery Bldg.

BUFFALO.....**LAfayette 7194**
Genesee Bldg.

CHICAGO.....**HArrison 5430**
842 S. Canal St.

CLEVELAND.....**CHerry 1010**
Williamson Bldg.

DALLAS.....**LD 224**
General Electric Bldg.

DENVER.....**MAin 6141**
Merchandise Mart

DETROIT.....**CHerry 6910**
Book Tower

KANSAS CITY.....**Victor 7671**
2100 Wyandotte St.

LOS ANGELES...**Michigan 8851**
Edison Bldg.

MINNEAPOLIS.**GRanville 7286**
Northwestern Terminal

NEW YORK..**Wickersham 2-6300**
570 Lexington Ave.

OAKLAND.....**HIgate 7340**
1614 Campbell St.

PHILADELPHIA...**KINgsley 3336**
Mitten Bldg.

PITTSBURGH.....**FAirfax 7911**
601 E. General Robinson St.

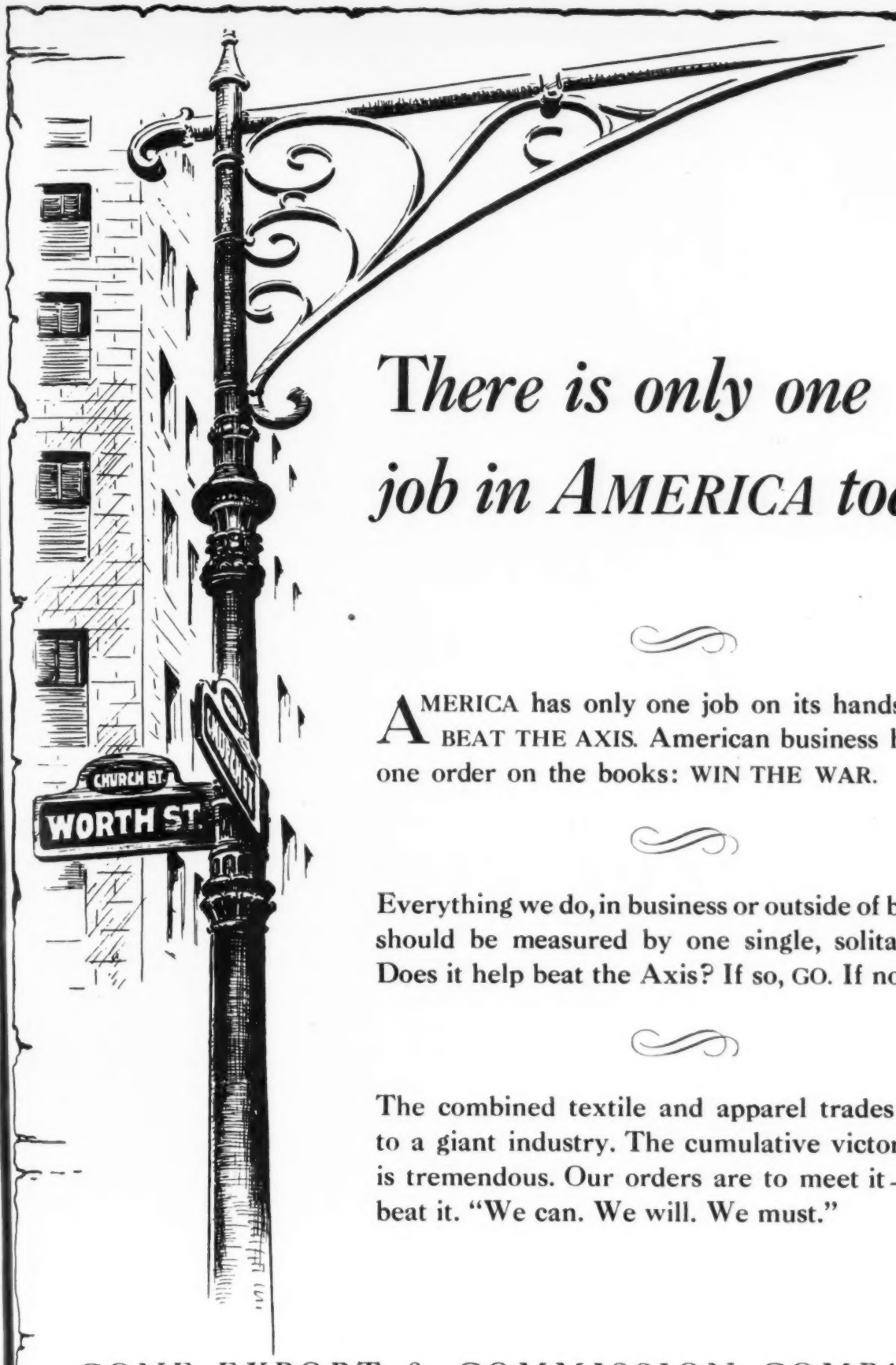
PORTLAND.....**BEacon 2101**
Oregon Transfer Bldg.

ST. LOUIS.....**CHestnut 8920**
710 N. 12th Blvd.

See your phone book for G-E Lamp offices in other principal cities

G-E MAZDA LAMPS

GENERAL ELECTRIC



There is only one job in AMERICA today

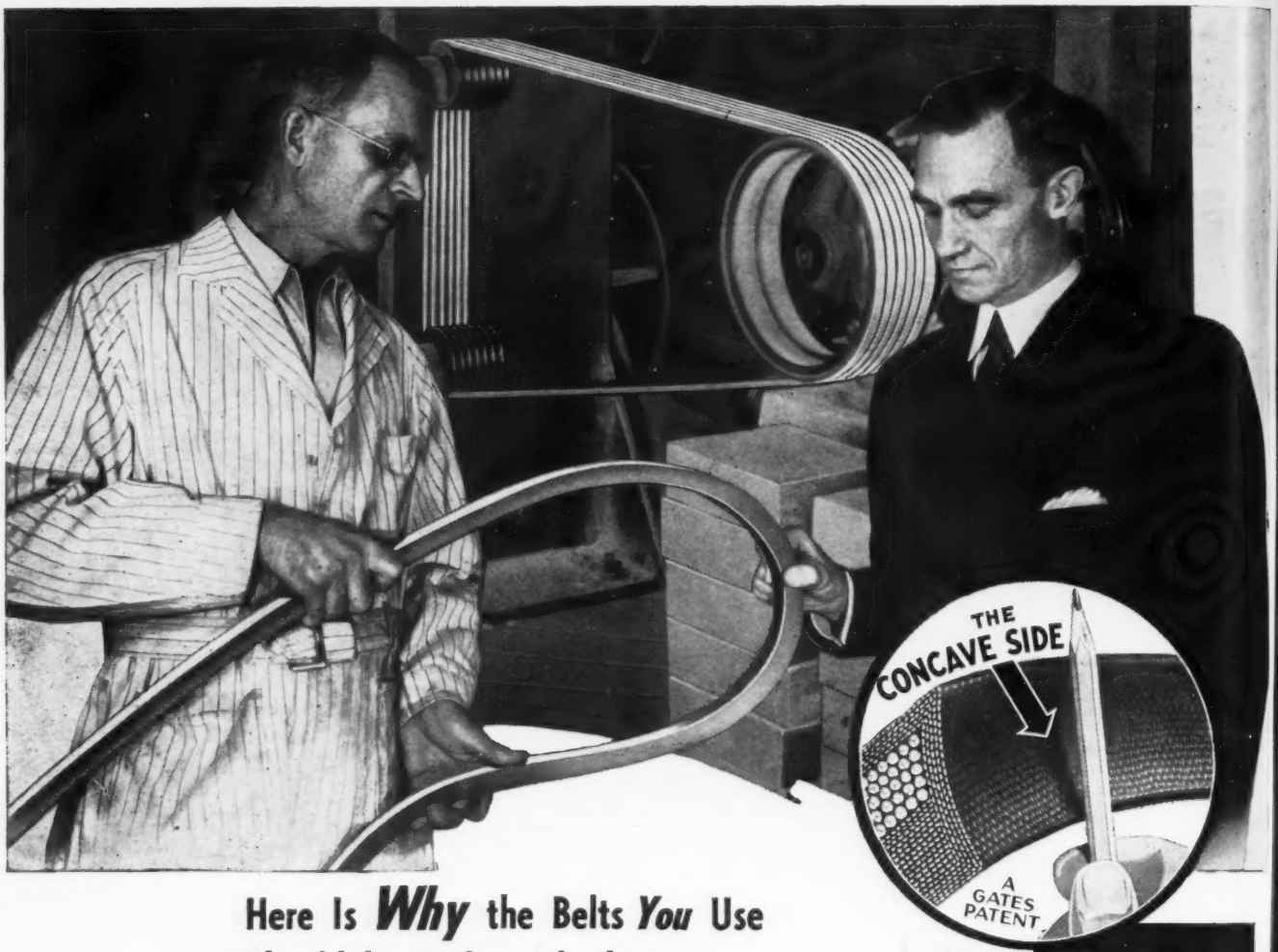
AMERICA has only one job on its hands today: BEAT THE AXIS. American business has only one order on the books: WIN THE WAR.

Everything we do, in business or outside of business, should be measured by one single, solitary rule. Does it help beat the Axis? If so, GO. If not, STOP.

The combined textile and apparel trades add up to a giant industry. The cumulative victory quota is tremendous. Our orders are to meet it—and to beat it. "We can. We will. We must."

CONE EXPORT & COMMISSION COMPANY

59 WORTH STREET NEW YORK, N. Y.



Here Is *Why* the Belts *You* Use Should be Built with the

CONCAVE SIDE!

A very simple test (pictured above) will show you the great importance of the Concave side. To make this test, take *any* V-Belt and bend it as it bends in going around its pulley. With your fingers, grip the sides of the bending belt. You will feel those sides *change shape*. Fig. 1, (on the right) shows what this shape-change does to a *straight-sided* V-Belt. Note the out-bulge of the sides.

Now look at Figure 2. There you see how *differently* the same shape-change affects a V-Belt built with the patented Concave side. The Concave side merely becomes straight—and this makes the bending belt exactly fit its sheave groove. There is no side-bulge. This means that wear is distributed *evenly* over the *whole side* of the belt—insuring longer life! Also, the whole side of the belt uniformly grips the sheave wall. This means heavier loads are carried without slippage—a real saving in belts—which conserves one of the nation's vital resources—rubber!

Only belts built by Gates are built with the Concave side, a Gates patent.

What Happens When a V-Belt Bends

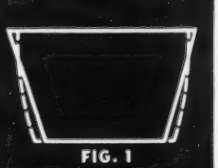


FIG. 1

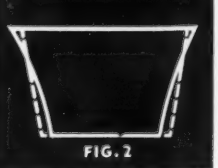


FIG. 2

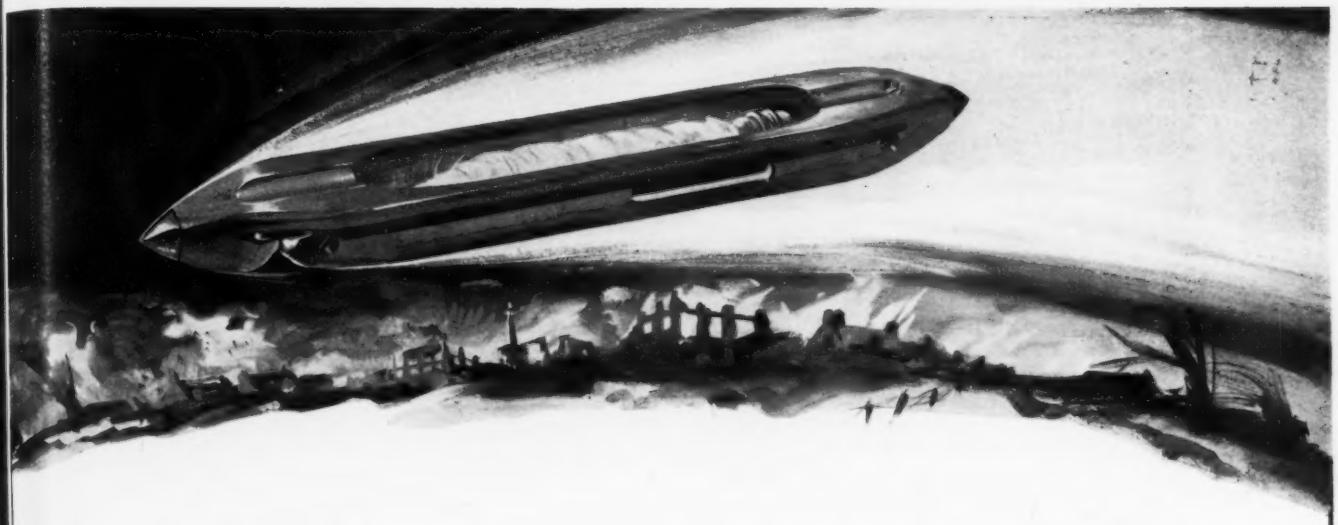
431

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

Chicago, Ill. 549 West Washington
Dallas, Tex. 2213 Griffin Street
New York City 215-219 Fourth Avenue
Birmingham, Ala. 801-2 Liberty National Life Bldg
Denver, Colo. 999 South Broadway
Charlotte, N. Carolina 507 Builders' Bldg.
Greenville, S. Carolina 104 W. Washington St.
Atlanta, Georgia 738 C. & S. Natl. Bk. Bldg.



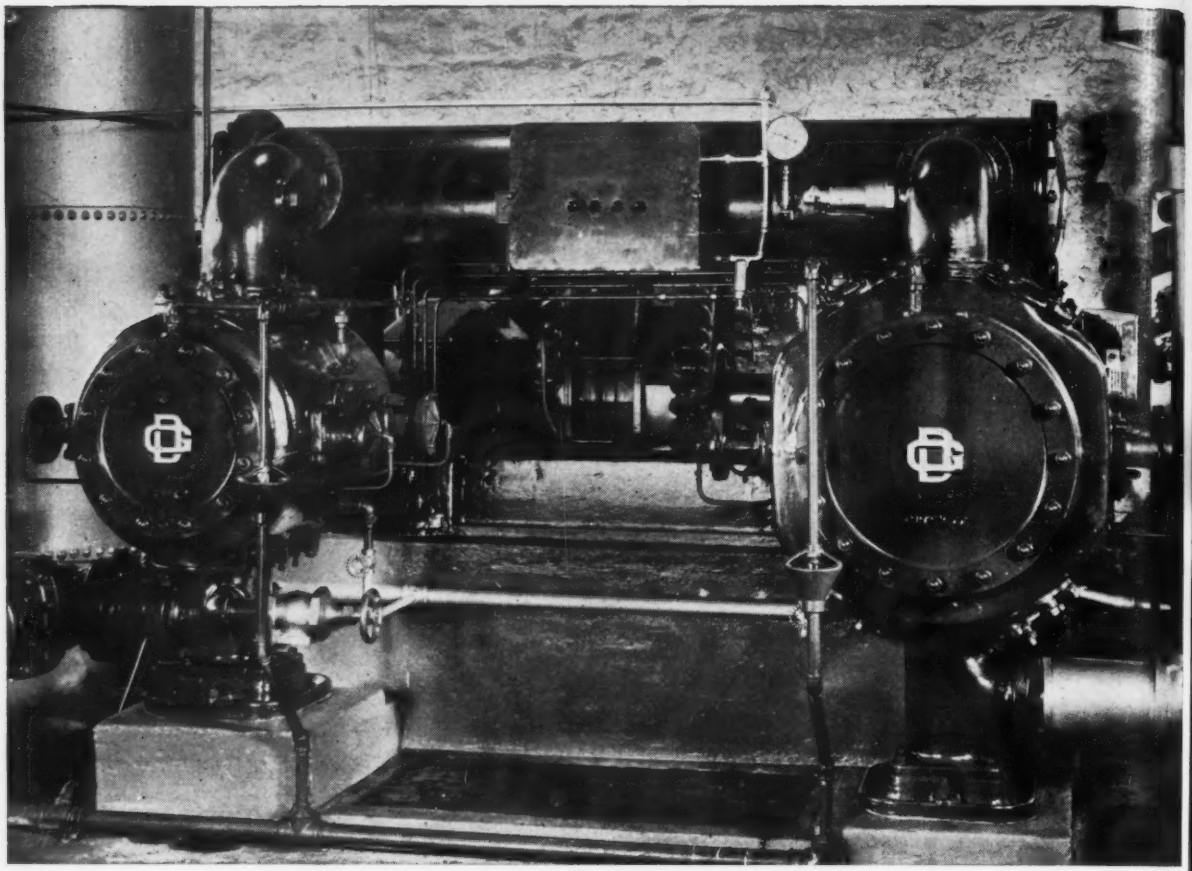
War's Flying Shuttles

Whirr . . . click . . . zing. The shuttles fly back and forth across some 32,000 looms, weaving the fabrics for war—for victory—for the peace to come. That's the sound of battle in the majority of Southeastern's great mills, where the racing shuttle is *our* "high velocity projectile". . . where the bobbins and spindles, the spools and the looms . . . *all* are our weapons of war.

SOUTHEASTERN COTTONS, INC.

58 Worth Street, New York City

BRANCH OFFICES: BALTIMORE • BOSTON • CHICAGO • CLEVELAND • DALLAS • PHILADELPHIA • SAN FRANCISCO • ST. LOUIS



MORE AIR
TO CLOTHE THEM ALL!

CLOTHING the soldiers, sailors, marines and civilians of a nation at war is a big job. Gardner-Denver "HA" Two-Stage Horizontal Air Compressors are helping the Textile industry do that job with real power economies.

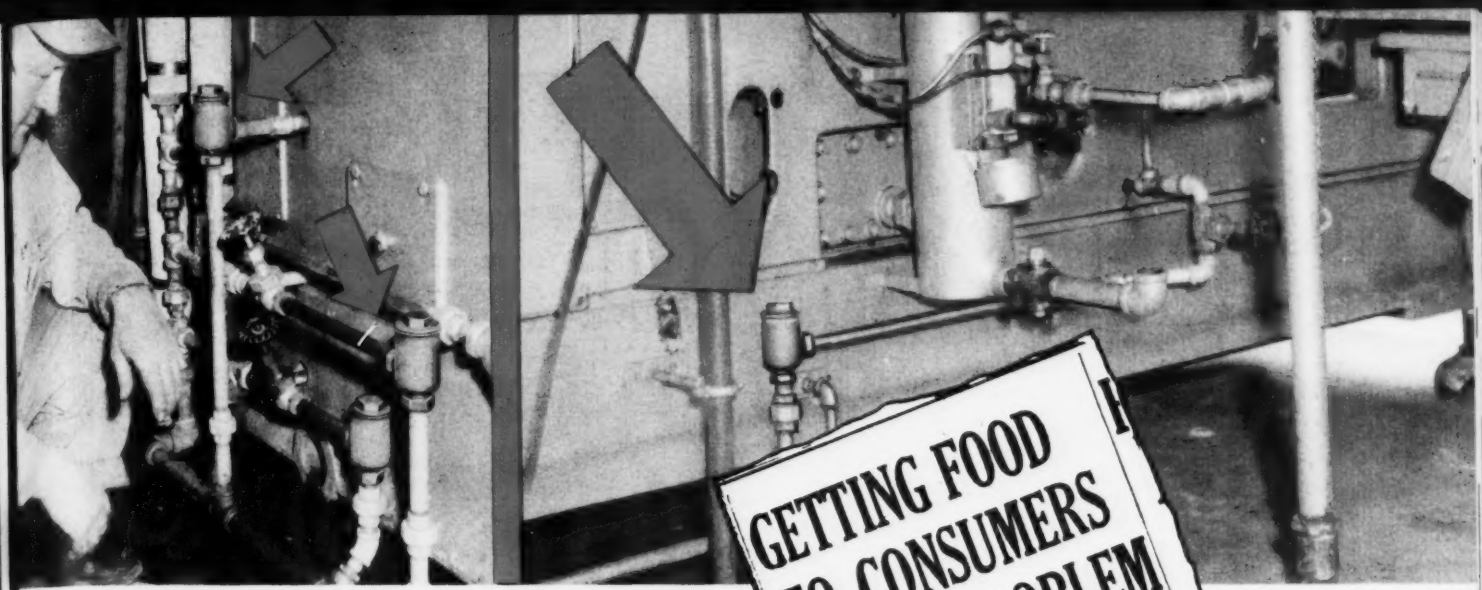
"HA" Compressors are ideal for the continuous heavy-duty service which war production demands. Yet their air output is automatically regulated to fit the needs of the hour. Unrestricted air passages and large valve areas assure high over-all efficiency.

Larger water jacket areas assure a cooler running compressor. Timken main bearings provide the synchronized motor with an unchanging air gap for the entire life of the compressor. "Air-cushioned" Duo-Plate valves decrease noise and wear—actually eliminate valve breakage.

Capacities of Gardner-Denver "HA" Horizontal Two-Stage Air Compressors range from 360 to 2012 cubic feet displacement per minute. Send for a descriptive bulletin. Gardner-Denver Co., Quincy, Ill.

Gardner-Denver Company, Quincy, Illinois. Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.

GARDNER-DENVER *Since 1859*



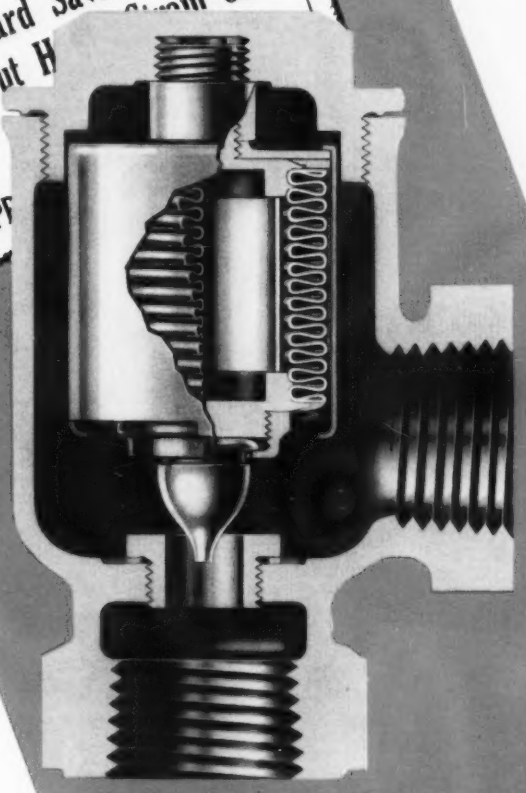
f it's a Steam-Process

SPEED UP WITH

SARCO No. 9 Steam Traps

Whenever you see a cluster of Sarco No. 9 Steam Traps you can be sure of several vital features in the equipment they serve.

1. No one steam coil can hold up another. They are all working at top speed.
2. No useful heat is escaping with the condensate. The No. 9 expels only the slightly cooled condensate.
3. There's no trouble starting up. It discharges all entrained air rapidly, being wide open when cool, which is also why it can't freeze.
4. Varying steam pressures will not affect the operation. No seats to change. It's the only thermostatic steam trap made for pressures up to 250 lbs.



The No. 9 has a powerful, snappy action due to the heavy wall, helically corrugated bellows made from flat blanks exclusively in the Sarco Factory at Bethlehem, Pa.

This trap has been carrying heavy loads in all types of process industries and on heating lines for a quarter of a century.
Try one in a tough spot and you will see the reason why.

SARCO Saves Steam

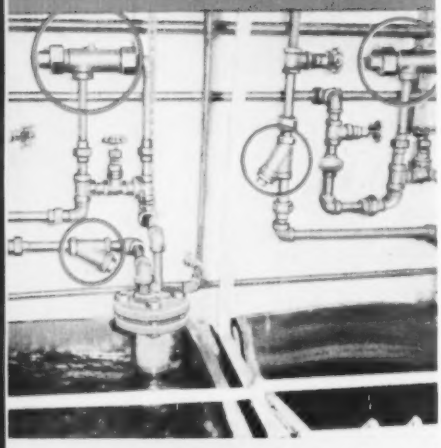
SARCO COMPANY, INC., 475 FIFTH AVENUE, NEW YORK

SARCO CANADA, LTD., 85 Richmond Street, West, TORONTO, ONTARIO

Represented in Principal Cities

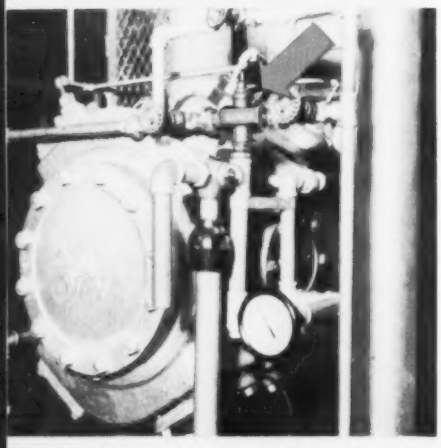
Simple

Temperature Controls for Industry



A manufacturer of records uses Sarco Thermotons on plating tanks.

A textile plant tried one TR-21 Temperature Regulator and now has four.



The TR–40 Cooling Control saved 75,000 cu. ft. of water a year in a chemical plant.

Elaborate equipment is not necessary to secure the advantages of automatic control of critical temperatures.

Sarco has made available simple, self-operated regulators which are providing adequate control on hundreds of applications at astonishingly low cost.

Take these three examples

1. At the cost of a good steam trap, the Sarco No. 87 Thermoton takes care of condensation removal and at the same time provides approximate temperature control of steam heated tanks, kettles or other small equipment. For the first time it has brought automatic control within the reach of small plating shops where it is used for all heated tanks, including washing and rinsing.

Catalog No. 550

2. Sarco type TR-21 self-operated temperature regulators are standard equipment on water and oil heaters, for all types of process work such as cooking, evaporating, drying, or degreasing; also for cooling controls and air conditioning.

Powerful liquid expansion systems provide gentle throttling control. Valves are packless — no stuffing boxes to leak or stick.

Catalog No. 600

3. If you are interested in saving up to 50% of the cooling water used on air compressors, condensers, stills, internal combustion engines, or degreasers, you will want to investigate Sarco type TR-40 cooling control.

A low cost, rigid stem type, it is easy to install, prevents over-or under-cooling, and saves on lubricating oil as well as water.

Catalog No. 700 describes four different types in sizes from ⅜" to 8"

80% of all industrial temperature control problems can be solved by a simple self-operated Sarco Regulator or an inexpensive "on and off" Sarco Electric Control.

SARCO Saves Steam

SARCO COMPANY, INC., 475 FIFTH AVENUE, NEW YORK

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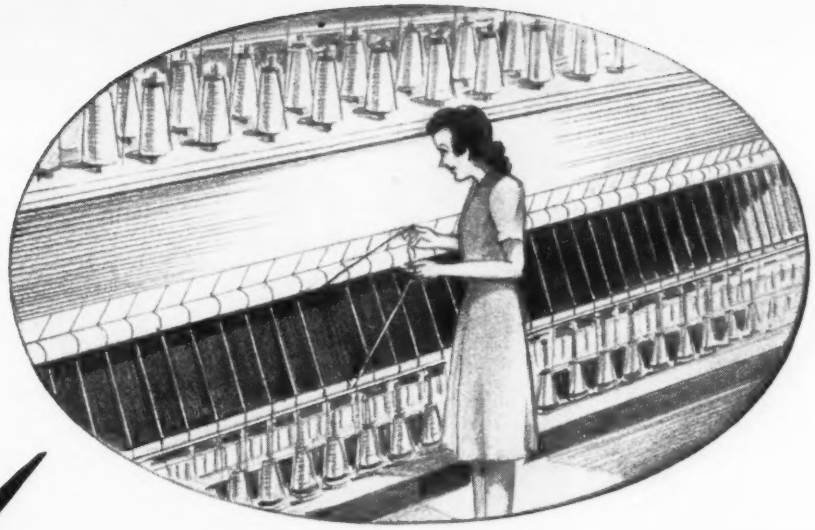
Represented in Principal Cities



You will use More Formica - after the war!

THE many useful properties of Formica—enhanced by intensified research for war purposes—will adapt it to new uses in textile manufacture after the war.

It is light—half the weight of aluminum—wears smoothly without slivering, does not discolor or stain, is non-absorbent, chemically inert, mechanically strong.

Those qualities have already adapted to many textile uses. In the new machinery to be designed after the war it will be more widely applied.

THE FORMICA INSULATION COMPANY
4668 Spring Grove Avenue Cincinnati, Ohio

CURRENT USES OF FORMICA IN TEXTILE EQUIPMENT . . .

- Loom Box Linings
- Tenter Frame Openers
- Inspection Table Tops
- Separator Blades
- Spools and Bobbins
- Platforms for Knitting Machines
- Linings for Factory Truck Bodies

FORMICA

Fig. 1640
Iron Body Bronze Mounted

Fig. 1644
All-Iron

Every Minute Saved in Maintenance . . . Means More Productive Hours

And these husky "King-clip" valves are doing just that... saving those precious minutes that add up to more productive time. With "King-clips" on the job, maintenance is cut to a minimum . . . users are assured of a practically permanent installation, free from the hundred-and-one "valve headaches".

"King-clip" Valves are doing their part in another respect, too . . . in conserving critical materials. Since only working parts are made of bronze, these iron body valves use less copper, tin and other scarce materials than all-bronze valves, at the same time performing equally as well on many services.

And here's an important point . . . you are likely to get better deliveries on "King-clips" than on the scarcer all-bronze valves. The complete facilities of Lunkenheimer distributors are at your service. They'll go all-out to help you get the things you need.

Since virtually all materials used in the manufacture of valves are on the list of critical materials, valve users are urged to furnish the highest possible preference ratings and proper "end use" information on their orders. This will be of mutual helpfulness.

ESTABLISHED 1862

NEW YORK BOSTON **THE LUNKENHEIMER CO.** CHICAGO PHILADELPHIA

"QUALITY"

CINCINNATI, OHIO, U. S. A.

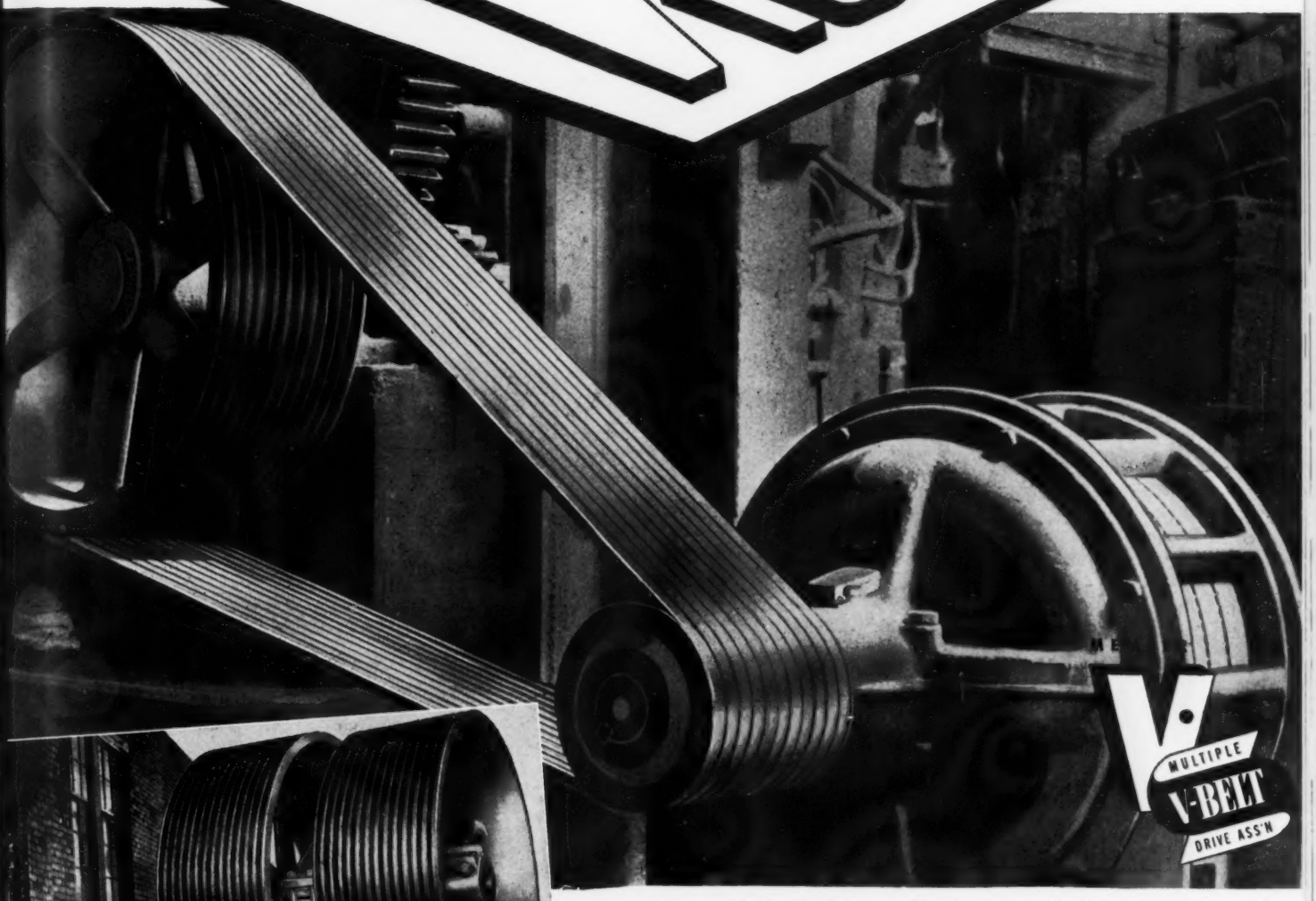
EXPORT DEPT., 318-322 HUDSON ST., NEW YORK

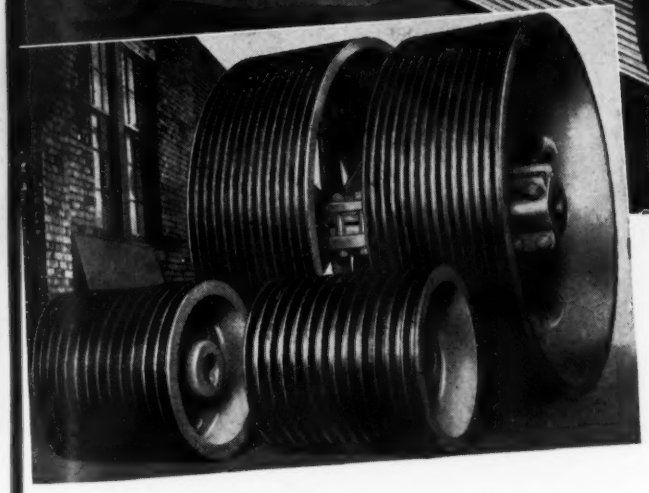
BRONZE, IRON AND STEEL VALVES, 125 TO 2500 LB. S.P. FOR ALL INDUSTRIES; BOILER MOUNTINGS, LUBRICATING DEVICES, AIRCRAFT FITTINGS

Woods V-BELT DRIVES

transmit power efficiently and smoothly
...Keep machines turning out the goods for

VICTORY





ood's V-Belt Drives are engineered to assure a maximum grip
h more pulling power that transmits power with minimum
... efficiencies are often as high as 98%.

eave grooves are precision machined, uniformly spaced and
olutely true, with side walls at proper angles. Belts are
full moulded, flexible, resilient and enduring. Sheaves and belts match perfectly so that the harder the pull the greater the wedging action of the belt in the groove . . . the greater the percentage of power transmitted.

Our stock assortment consists of nearly 2800 drives, from 1/4 H.P. to 100 H.P. with at least a dozen selections of center distances for each drive. They're fully described in our 64 page V-Belt Catalog . . . a copy is yours on request.

EVERYTHING IN POWER TRANSMISSION

Bearings — Collars — Clutches — Couplings — Contactors — Hangers — Pillow Blocks — Pulleys — V-Belt Sheaves and Complete Drives.

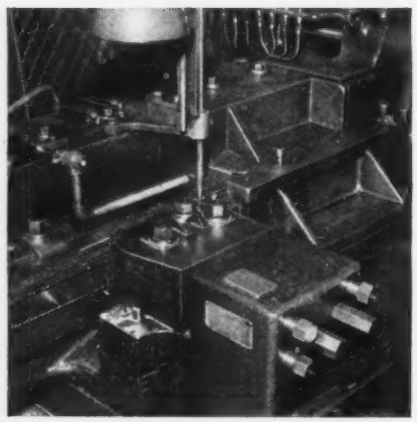
Y WAR BONDS

B. WOOD'S SONS COMPANY, Chambersburg, Pa.

OFFICES: 387-391 ATLANTIC AVE., BOSTON, MASS. · 94 PLANE STREET, NEWARK, N. J. · 425 FIRST AVENUE, PITTSBURGH, PA.

LONG LIFE LINE

better Methods with special machines



A Baldwin-Duckworth special machine that rolls tenons with greater accuracy than a screw machine operation.

American machine designers are famous for standardized machines and standard tools. The many and amazing special machines they produce are known to few. These are often used only in the designer's own plant. They are always "stoppers" when machine designers or mill superintendents visit our plants.

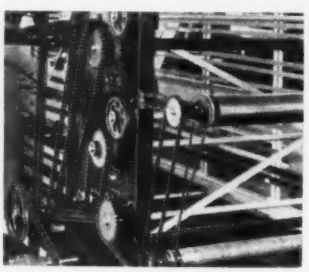
One of them is a tenon rolling machine. Fair equivalents of the operations it performs could be produced on standard screw machines. Instead of cutting tenons for small diameter pins for some of our chain belts, this special machine rolls them to give uniform concentric circumferences. Tolerances are unfailingly close—a basic essential for the quiet efficiency and long life of Baldwin roller chain belts.

Better DRIVES with Baldwin Roller Chain Belts

Their split-second timing—their positive maintenance of speed ratios—their ability to absorb shock-loads and impulses are important factors in continuous, trouble-free operation. Never forget this point when you are designing new or replacing old drives: *roller chain belts are the only type of transmission that can absorb shock-loading without loss of speed ratios or efficiency.*

Your Baldwin-Duckworth catalog is a roller chain belt encyclopedia, but for specialized applications of chain belts for the transmission of power or conveying of materials, also consult a Baldwin man. Baldwin-Duckworth Division of Chain Belt Company, 346 Plainfield St., Springfield, Mass.

EXAMPLE



The shrinking machine has drives with these important advantages:

1. Positive maintenance of speed ratios between many parts.
2. Equal efficiency on both long and short centers.
3. Continuous, jerk-free smoothness of operation.

IT'S BALDWIN-EQUIPPED

Better Drives Through Better Methods!

BALDWIN

ROLLER CHAIN BELTS

2000-LB. MESSAGE TO THE JAP FLEET—

The torpedo that fights the Jap must first win against the same enemy you fight in your work—*corrosion!*

That ton of torpedo, darting toward a Jap cruiser, carries the American message—"this is *one* installment in our reckoning with Tokyo!"

Straight and true, it holds its near mile-a-minute course—the Navy's "Joe Louis punch"—a one-ton mechanism more intricate and finely balanced than a costly watch.

1300-plus parts do their perfectly coordinated job behind the war head of this American "tin fish." They can hold it at a pre-determined depth for miles—get it back on course if it swerves or "porpoises"—dip it, if necessary, under a screening destroyer to find an aircraft carrier beyond—do everything, in fact, but think!

And this, despite the weeks or months on shipboard in varied climates, exposed to sea-buffeting, vibration, temperature change and corrosion.

Yes, a torpedo is a marvel of engineering. And backing up its precision design are parts chosen with matching precision to do their job perfectly.

Many of these parts . . . as you would expect . . . are made of MONEL. Tough, strong, rust proof . . . MONEL combines all the qualities of the ideal "sea-goin" metal . . . qualities also vitally important in the factory.

Today, MONEL serves vital needs on our war fronts as it does year-in and year-out in the world of textiles.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST, NEW YORK, N.Y.

★ ★ **INCO NICKEL ALLOYS** ★ ★

MONEL • "K" MONEL • "S" MONEL • "R" MONEL • "KR" MONEL • INCONEL • NICKEL • "Z" NICKEL

Sheet . . . Strip . . . Rod . . . Tubing . . . Wire . . . Castings

Don't

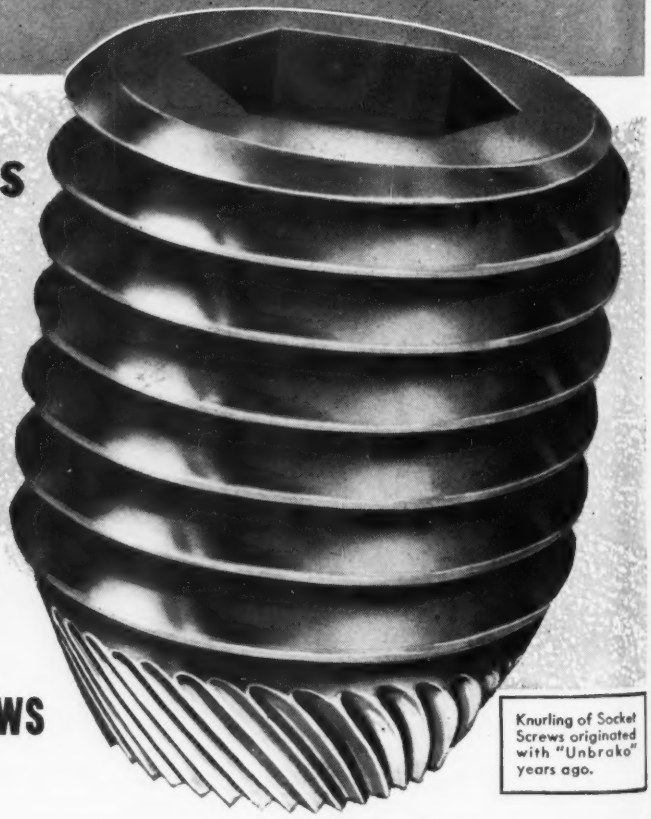
. . . RISK DAMAGE TO IRREPLACEABLE MACHINES

Where ordinary set screws fail to hold . . .

Install

Reg. U. S. Pat. Off.

UNBRAKO



Knurling of Socket Screws originated with "Unbrako" years ago.

SELF-LOCKING HOLLOW SET SCREWS with the KNURLED POINTS

Failure of a set screw to hold tight can cause all sorts of trouble to equipment and delay production as well. Why risk it? Where there is likelihood of ordinary set screws failing to stay put, replace them with "Unbrako" Self-Lockers. These have knurled points that dig in when the screws are tightened as usual and hold tight come what may. Yet, they are easily removed and can be used over and over. Send today for our complete "Unbrako" Catalog.

Sizes: No. 4 to 1½" diameter

"UNBRAKO" WELT BAR SCREWS

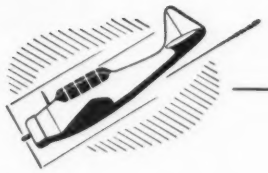
"UNBRAKO" Welt Bar Screws—are uniformly strong and accurate. Used in leading mills throughout the Industry. Let us send you samples.

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 571 · BRANCHES: BOSTON · DETROIT · INDIANAPOLIS · CHICAGO · ST. LOUIS · SAN FRANCISCO

DYE VATS YESTERDAY...

Warplanes Today!

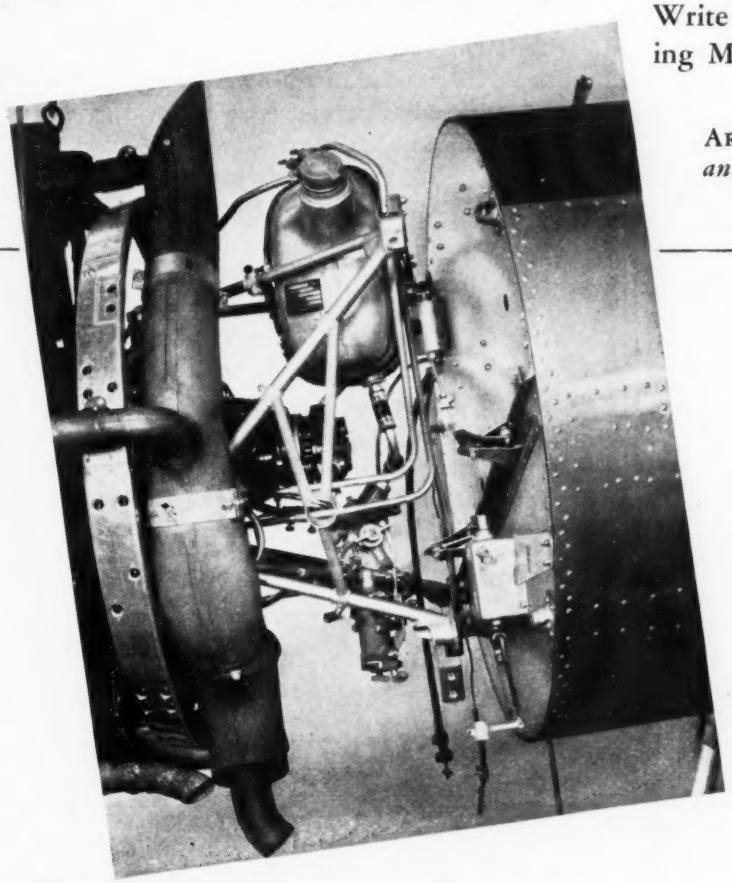


The same ARMCO Stainless Steels that before the war were so desirable for dye vats and other textile machines now serve Uncle Sam in the exhaust systems of our warplanes. There they fight corrosion and withstand temperatures as high as 1850° F.!

These and other harsh tests of war are being met successfully by ARMCO Stainless Steel. All the while we are learning more about producing it better, which will benefit you when peace comes.

Meanwhile, if you are so fortunate as to have ARMCO Stainless Steel equipment, you can easily keep it operating at peak efficiency during the war. Just a few simple maintenance rules will make replacements and repairs unnecessary.

Helpful suggestions are given in a valuable little folder titled "Your Stainless Steel Equipment . . . Its Care and Advantages in Textile Processing." Write for a copy. Just address The American Rolling Mill Co., 461 Curtis St., Middletown, Ohio.



ARMCO *Stainless Steel collector rings battle heat and corrosion in the engine of a modern plane.*

MADE OF ARMCO STAINLESS STEEL

THE AMERICAN ROLLING MILL COMPANY

Duplan

FOR THROWING

★ ★ ★

In four plants, all modern, all extremely well-equipped, The Duplan Corporation does the largest volume of throwing in the country

RAYON • NYLON

ACETATE

SILK • COTTON • WOOL

FOR KNITTING, WEAVING,

MILITARY AND INDUSTRIAL

PURPOSES

The Duplan name stands for quality... large capacity . . . dependability

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The Duplan Technical Staff will serve you on special problems

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CORPORATION

512 Seventh Avenue, New York

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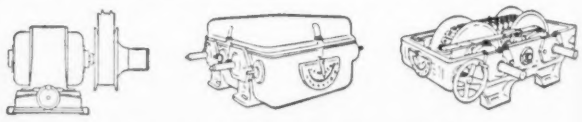
★ SOUNDS STRANGE, doesn't it? But ask any experienced engineer about his production machines. He'll tell you that a *certain* operating speed is necessary for maximum efficiency and output for the job at hand. And that the *correct* operating speed varies according to the job, the material and the operator. Often improved products and increased production, due to less spoilage, is accomplished by *reducing* speed at the judgment of the operator.

The addition of Lewellen Variable Speed Control to your production machines will provide the *right speed at the right time*. Change jobs, change materials, change operators and at the same time make necessary speed adjustments by the simple turn of a Lewellen handwheel.

In your own plant there may be an operation or process that could be speeded or otherwise improved by the addition of a Lewellen Variable Speed Transmission, Motor Pulley or Automatic Control. We're on our toes to apply our more than 40 years' experience to your problems. We have no side-lines—no other interest than to help you and, thus, to team-up with industry in an all-out war effort. Wire, phone, or write, NOW!

LEWELLEN MANUFACTURING COMPANY, COLUMBUS, INDIANA



LEWELLEN

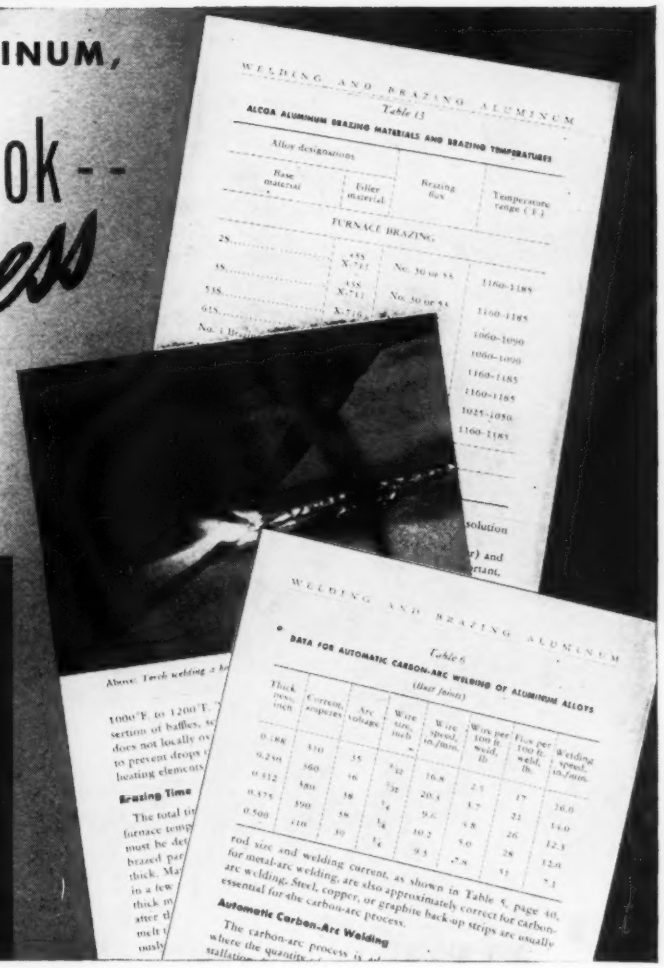
Variable Speed { TRASMISSIONS / MOTOR PULLEYS

★ Lewellen knows speed control

IF YOU'RE WORKING WITH ALUMINUM,

you should have this book--

just off the press



WELDING AND BRAZING ALCOA ALUMINUM

Here's a book of data designed to meet the needs of the practical man—the welder—who is working with Aluminum Alloys. It describes in detail the practices now widely employed for joining Aluminum parts by gas welding, arc and resistance welding, and by brazing.

This book is planned to assist the war effort by making every welder more proficient at his job. Typical subjects covered are: Welded joint design—preparation of parts—types of welding equipment—electrodes and fluxes—tip selection and flame adjustment—inspection and finishing—strengths of welds.

Joining Aluminum Alloy parts by welding and brazing is readily mastered with knowledge like this at your command, plus a little practice. You may have this book free. Use the coupon to send for your copy today.

ALCOA

ALUMINUM

ALUMINUM COMPANY OF AMERICA,
1942 Gulf Bldg., Pittsburgh, Pa.
Please send me this new book.

Name_____

Company_____

Street_____

City_____

MORE TRUTH THAN POETRY

As literature the above rhyme leaves something to be desired, but the fact therein cannot be questioned. Leather Belting *is* the most efficient of all mechanical power transmission mediums.

On practically every type of drive, Leather Belting delivers more power at lower maintenance cost than any other material. Its inherent characteristics—greater gripping power, flexibility, tensile strength and longer life—plus the craftsmanship of the tanner, currier and belt maker, place Leather Belting at the top of the power transmission list. Furthermore, it is the one material that, even after years of service, has a worthwhile salvage value.

Consult your own Leather Belt maker. Whatever your power transmission problems, you can rely on his specifications to meet your needs exactly. Likewise, you will get your belting when promised, *for leather is available.*

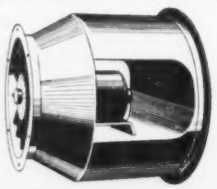
WM. C. BROWN LEATHER CO.

Tanners & Manufacturers

1702-10 TULIP ST. PHILADELPHIA, PA.

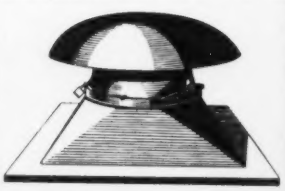
Besides leather for flat and round belting, we manufacture pump, hydraulic, polishing, strap and harness leathers.

4 ANSWERS TO VENTILATING PROBLEMS



1 HEAT AND VAPOR EXHAUST SYSTEMS

DeBothezat Bifurcators *install right in the duct.* For handling corrosive or high temperature fumes and gases. Motor isolated from fumes in chamber open at both ends. Sizes 18 in. to 4 ft.

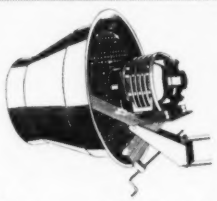


2 ROOF VENTILATORS

Assure positive ventilation *regardless* of temperature, humidity and wind velocity. Hinged top gives easy access to motor, fan and shutter. Light-proof; ready for blackout. Sizes: 21", 27", 36".

3 GENERAL EXHAUST SYSTEMS

DeBothezat offers a complete series of volume and pressure, axial-flow fans. Non-overloading power characteristic. Guaranteed performance ratings based on wind tunnel tests. Direct drives. Sizes from 18 in. through 10 ft.



4 FOR BLOWING LINT

"HY-V" Air Jet combines high-efficiency, axial-flow fan with conversion nozzle for blowing a column of air. Arranged for column or floor mounting. "Air Jet" can be pointed in any direction.

Literature on all DeBothezat Ventilating Equipment is available on request.

De Bothezat

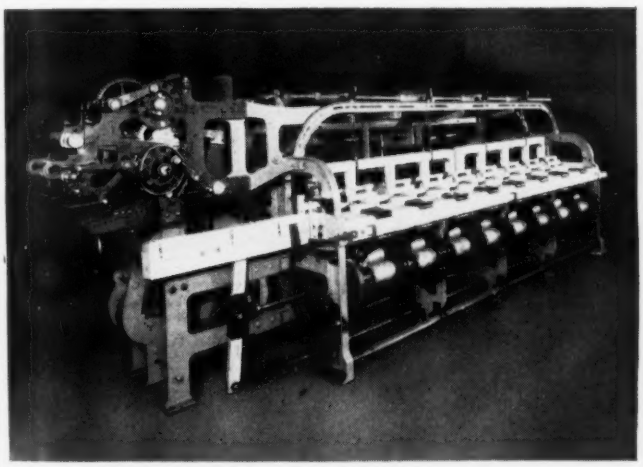
VENTILATING EQUIPMENT

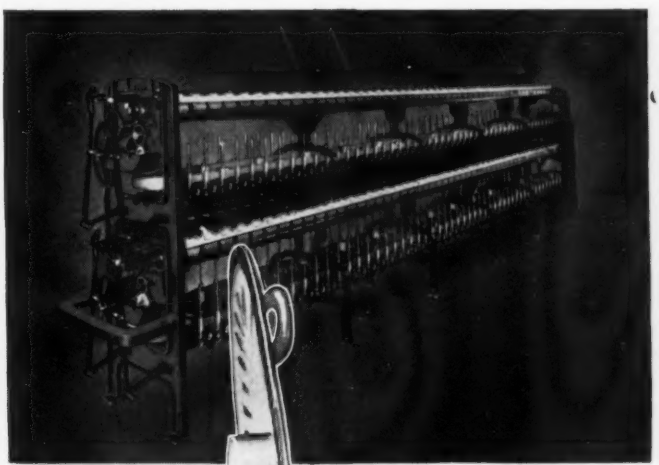
Division of American Machine and Metals, Inc.
East Moline, Illinois

When, once again, textile equipment is available freely to all — the name, FLETCHER, still will identify the finest high-speed machines of their types!

THIS IS A PROMISE BY FLETCHER DEVELOPMENT-ENGINEERS

PRODUCTS FOR WAR AND FOR PEACETIME MARKETS ARE ECONOMICALLY PRODUCED ON LOOMS, WITH THROWING MACHINERY, AND BY HIGH-SPEED EXTRACTORS BUILT TO FLETCHER STANDARDS





Left, above: This Fletcher loom makes webbing for war.

Right, above: The famous "Apex" twister, built by Fletcher.

Below: The Fletcher High Speed "Whirlwind" extractor which saves as much as one-half in extracting time.

• Ask any Fletcher customer about any Fletcher machine . . . You'll find records of service which, in length and in low costs in production and maintenance, fully explain the wide use of Fletcher-engineered equipment in the textile industry.

• *Planning for the future?* We'll be glad to help with all information about the Fletcher products-to-come. Just write (on your letterhead, please).

FLETCHER WORKS • GLENWOOD AVE. & SECOND ST., PHILA., PA.

1854 1943

We have been factors to the textile and allied industries for 89 years. Our efficient credit checking facilities, together with the purchase of accounts receivable, furnishes our clients with additional working capital while relieving them of all credit risks.

We invite your inquiry as to our service.

James Talcott, Inc.

★ FACTORS ★

225 Fourth Avenue New York City

THE OLDEST AND LARGEST

Manufacturers of

RING SPINNING AND TWISTER TRAVELERS

IN THE UNITED STATES

NATIONAL - ETARTNEP FINISH
A NEW CHEMICAL PROCESS

American • Hicks • Wilson

United States Standard
Wentworth Double Duty
and Gravity Travelers

MAKE STRONGER YARN

Double Duty and Gravity Travelers embody a new heat-treating principle, reduce to the irreducible minimum the frictional contact between the Traveler and the Ring. The life and endurance of the Traveler is not only multiplied by two, and oftentimes to a greater degree, but the life of the spinning Ring is increased in relative proportion to the lessened frictional load.

NATIONAL RING TRAVELER COMPANY

PHILIP C. WENTWORTH, Treas.

PAWTUCKET, R. I., 354 PINE STREET **CHARLOTTE, N. C.**

BEFORE THE TAKE-OFF *SINGER* IS ON THE JOB

Before one of the giant Curtiss "Commando" transports can take off, many things must be done. Men and women work day and night with many different tools and materials.

Singer sewing machines play a vital part in building planes, and clothing and equipping men for all branches of the armed forces.

Singer sewing machines formerly available for making hundreds of different things for civilian use are now sewing parachutes, uniforms, tents, gun covers, shoes, powder bags, fur lined helmets, and many, many other articles needed to bring speedy victory to US. And if, like many others, you are having trouble getting Singer sewing machines, remember that Uncle Sam is our first customer, and his needs must be satisfied first.

SINGER

SEWING MACHINE COMPANY

Manufacturing Trade Department

149 Broadway, New York, N. Y.

Branches in principal cities throughout the world

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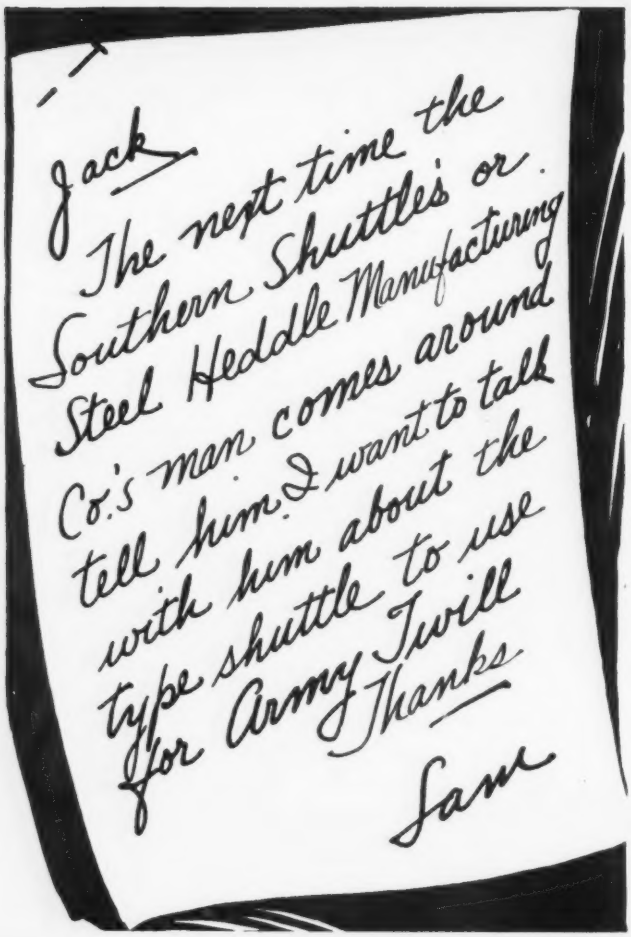
(Photo courtesy of Curtiss-Wright Corp.)


Jack
The next time the Southern Shuttle's or Steel Heddle Manufacturing Co.'s man comes around tell him I want to talk with him about the type shuttle to use for Army Twill
Thanks
Sam

U.S. ARMY
U.S. NAVY
MARINE CORPS
AIR FORCE
COAST GUARD

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GOVERNMENT ORDERS?

You can meet specifications Easier with

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THE IDEAL MARKING CRAYON
for all textiles
Made especially for marking the roving in wool, cotton, silk, rayon, and all textile mills. 18 colors available. Write Dept. TW-2 today for FREE Color Chart!
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for

BATHING SUITS
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Sell Faster

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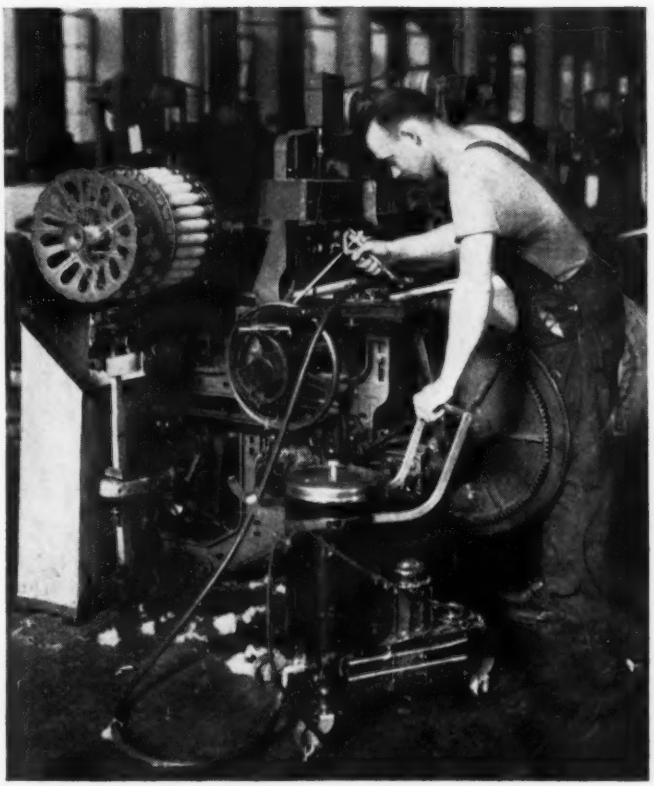
Save Time!
AVOID CONFUSION!

Let One Dependable Pressure Gun Lubricant Replace Many!



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Famous in Textile Industry! Does Many Jobs Well!

IN these days when every order is a rush order, and most of them are related to America's great victory program, any idea for saving time and avoiding confusion is worth while. That's why so many leading mills are using Alemite Solidified Oil to replace several kinds of lubricants—because it does many jobs well.

On knitters, spinning frames, carding machines, front roll stands and looms, Alemite Solidified Oil is speeding production, safeguarding precious bearings, and reducing contamination loss. Rayon mills and hosiery manufacturers, too, praise its efficiency.

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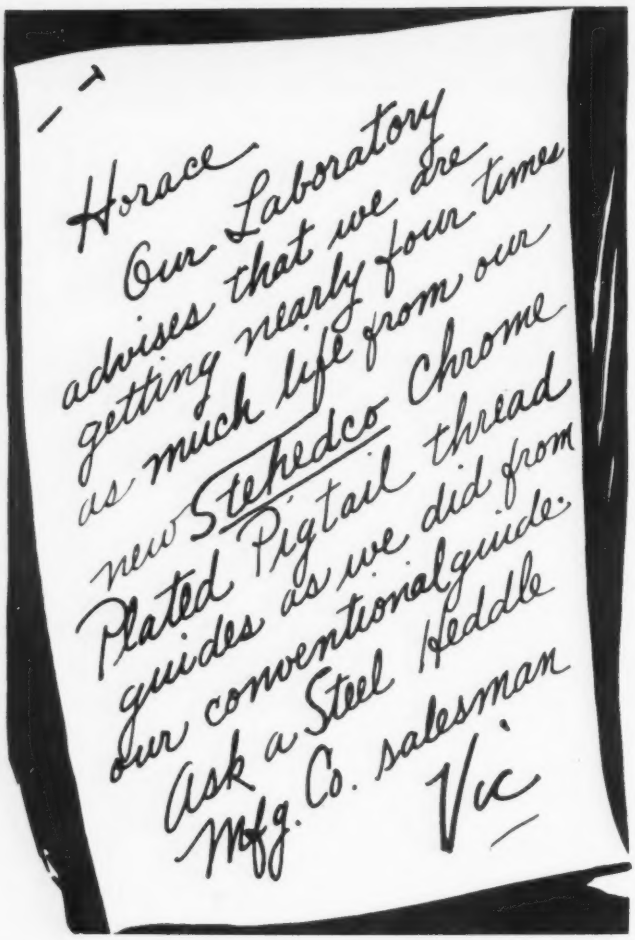
Horace
Our Laboratory advises that we are getting nearly four times as much life from our new Stehedco Chrome Plated Pigtail thread guides as we did from our conventional guide.
Ask a Steel Heddle Mfg. Co. salesman
Vic

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AND
WOOLEN YARNS
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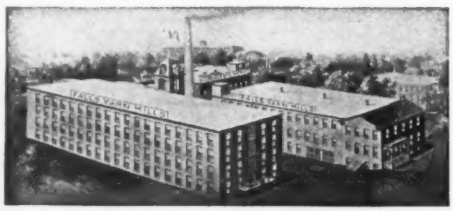
WOONSOCKET, R. I.
Incorporated 1904



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Two exclusive Features Affording Long Life:

1. Automatic-bobbin holders equipped with holding wings electrically hardened all the way through.
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We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins. Holders for all types of mules, frames, twisters, and winders.

MURDOCK & GEB CO., Franklin, Mass.
Manufacturers of Bobbin Holders for Over Fifty Years

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RAYON TOPS

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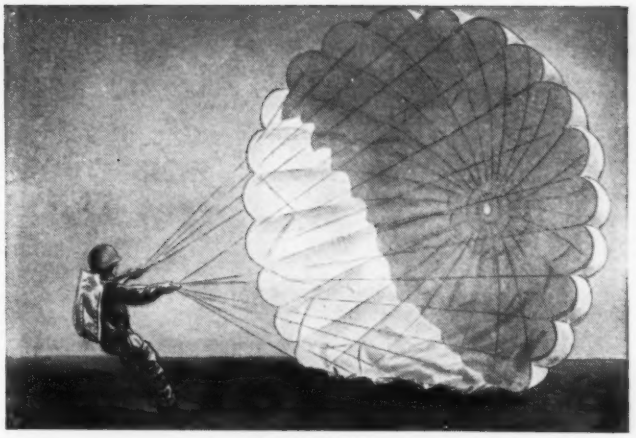

Textiles for Victory

The parachute is but one of the more spectacular of hundreds of textile products, every one of which is vitally needed to gear and maintain our fighting forces. In quantities of many millions, the Textile Industry must produce these items ON TIME, using only existing equipment. In your efforts to achieve MAXIMUM production, bear in mind that a change-over to new rings or new styles of rings can often accomplish gratifying results—especially if the rings are DIAMOND FINISH.

We make all types of Holders

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DIAMOND FINISH
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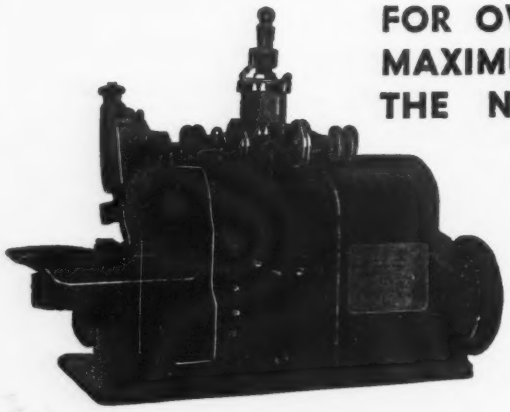
Established 1838 **MERROW** **Incorporated 1894**



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200 VARIETIES FOR 200 PURPOSES

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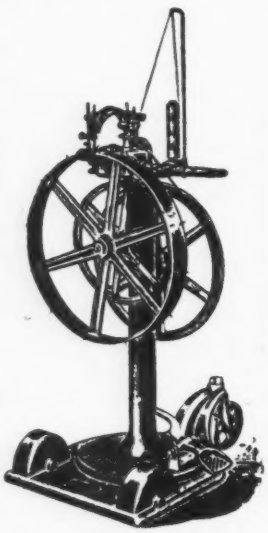

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See Also Textile World Year Book and Catalog

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No. 3

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Quality LATCH and SPRING-BEARD

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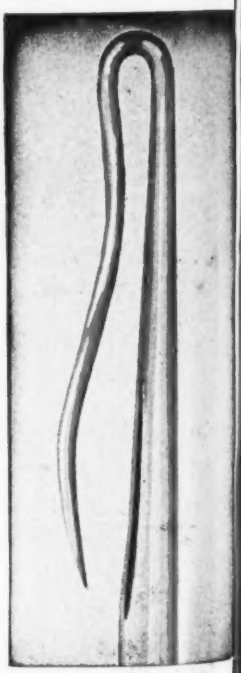

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AMERICA is Production Conscious

We're breaking all known production records in the world on everything we and our allies need for the war. It is a "speed up America" program in every use of man hours. For example

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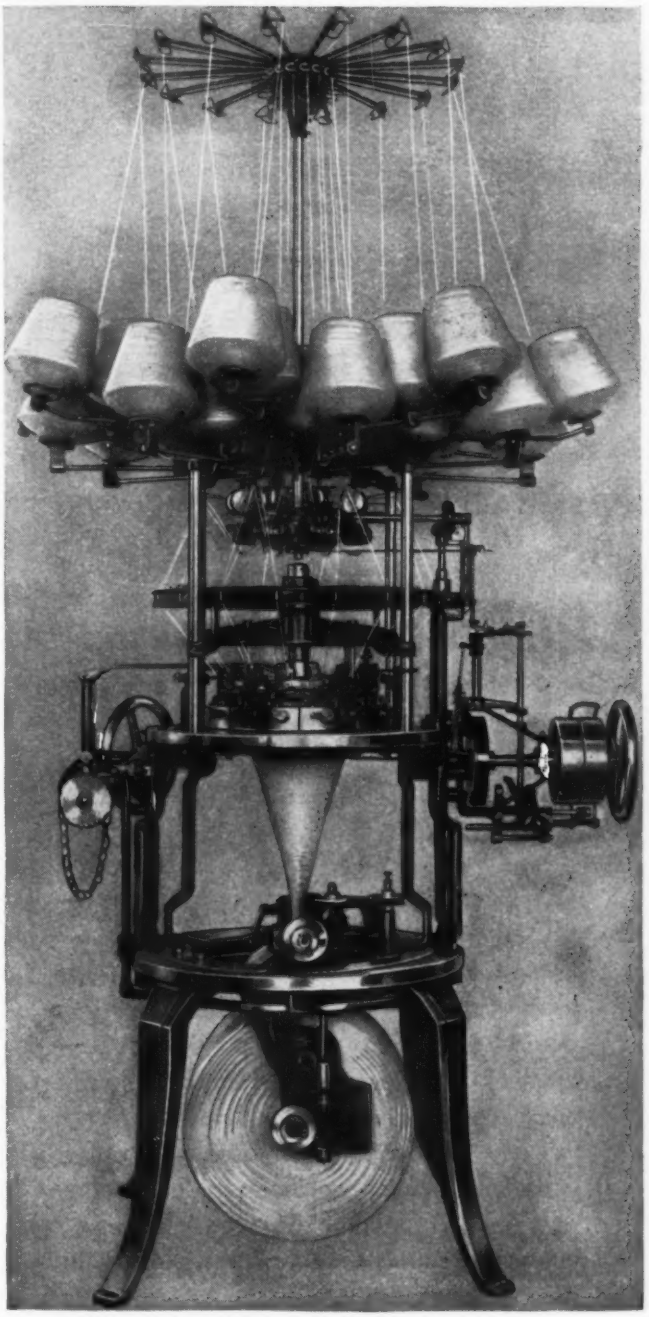
WILDMAN

Multiple Feed Rib Machine

and while it is performing this miracle of production it consumes only a little over a third more power, gives you easier, trouble-free operation and a finer product. Write for complete details. It's interesting and helpful information.



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For AMERICA
"Throw YOUR SCRAP into the Fight"
AMERICAN INDUSTRIES SALVAGE PROGRAM

TO WIN QUICKLY AND COMPLETELY!

WE are concentrating all of our efforts — all our facilities — all our abilities — behind the well known gentleman whose likeness appears above. In doing so — we are also serving your best interests — even though we may temporarily be compelled to give you the impression that we are neglecting you. Our sole object is to help win as quickly and completely as possible. Meanwhile, we will help you users of Brinton Knitting Machines, to the best of our ability.

BRINTON

Circular Knitting Machines
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BUY UNITED STATES WAR SAVINGS BONDS

The NEW ENGLAND BUTT Textile Braiders

DESIGNED AND CONSTRUCTED to insure an efficient and profitable output. The claim of every NEW ENGLAND BUTT COMPANY braider, proved by every installation. Competition demands the utmost in the output of braiding machines. Write and ask us for our Catalog Number 41 containing information on braiding.

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Speak for themselves

Up-To-Date Machines

Needles

Economy Makers

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made in the Knitting Field years ago

is maintained TODAY . . .

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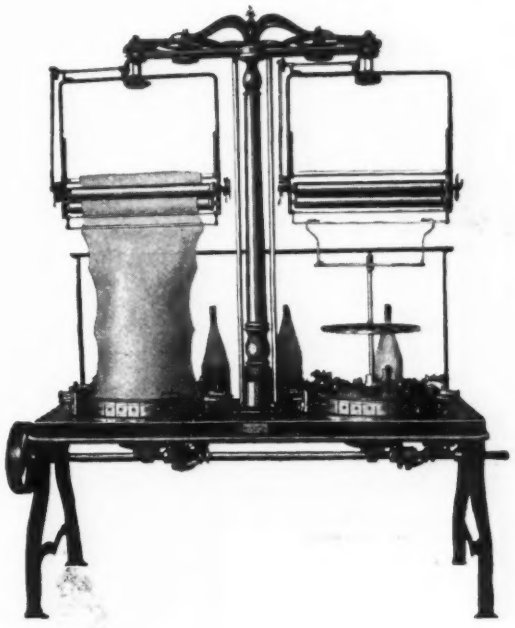
CRANE features are the result of long experience with knitters and their problems

Crane outstanding features include patent thread-stop motions; and removable, hardened wing burr wheels. These and other Crane features are your guarantee of high speed, low cost production and freedom from costly and troublesome stops. Upon request we will be glad to have a representative call and outline just what Crane has accomplished in the knitting field, and to suggest how the use of Crane equipment can increase quality output and versatility and reduce production costs in your mill– ***WRITE!***



Our Spring Needle Underwear Machine with Automatic Take-up is shown here. This machine is made in sizes from 12 in. to 36 in. in diameter for the production of a great variety of fabrics of any desired gauge, the number of feeds depending on the size of the cylinders. Aside from the feeds for plain fabrics the stockinet, eiderdown and astrachan feeds are superior to any on the market.

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LAKEPORT, N. H.

CRANE spring and latch needle KNITTING MACHINERY

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a full line of

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DYEWOODS
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As in the past, we are prepared to help you with any manufacturing problems you may have. We place our experience and our research facilities at your disposal.

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A FULL LINE OF DYESTUFFS
CONVERTED STARCHES
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FINISHING COMPOUNDS
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"Boiling soap is a nuisance, also expensive."

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"Stuck places, creases and whiplashes are my trouble."

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"Unsaponified oil, grease and dirt give me many a headache."

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"I blame hot soap for most of my fulling troubles."

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THE STANDARD DE-SIZING AGENT

for cottons, rayons and mixed goods

For your de-sizing problems—our technical men are at your service . . . Write or 'phone.

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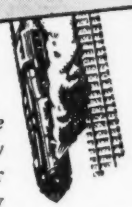
Laurel FINISHES ALSO *serve*



—behind the man behind the supply trains and the supply dumps—the Quartermaster who keeps our fighting army in clothes and supplies. Laurel Oils and Finishes are helping manufacturers speed deliveries of the miles of knit and woven fabrics, the mountains of hose, and the myriad items that "combat maintenance" covers.

For over 30 years Laurel technicians have worked out textile processing answers. They will be glad to cooperate with you on your war service as well as your civilian orders.

Throw your scrap into the fight!

SOAPS *Laurel* OILS FINISHES

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Special Soaps

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WRITE US FOR SAMPLES AND QUOTATIONS

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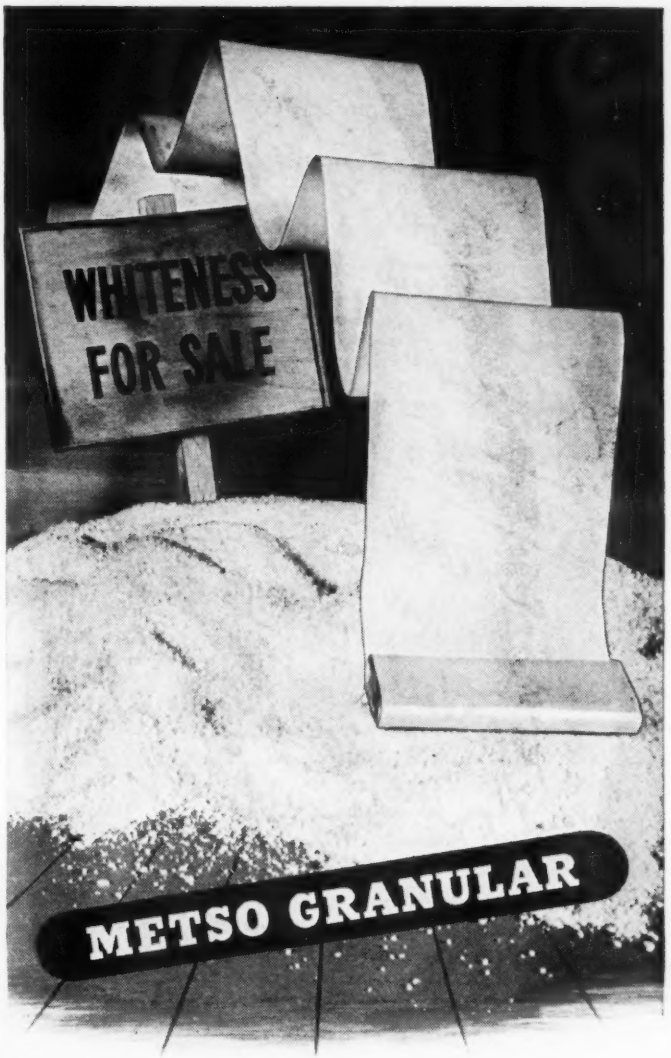

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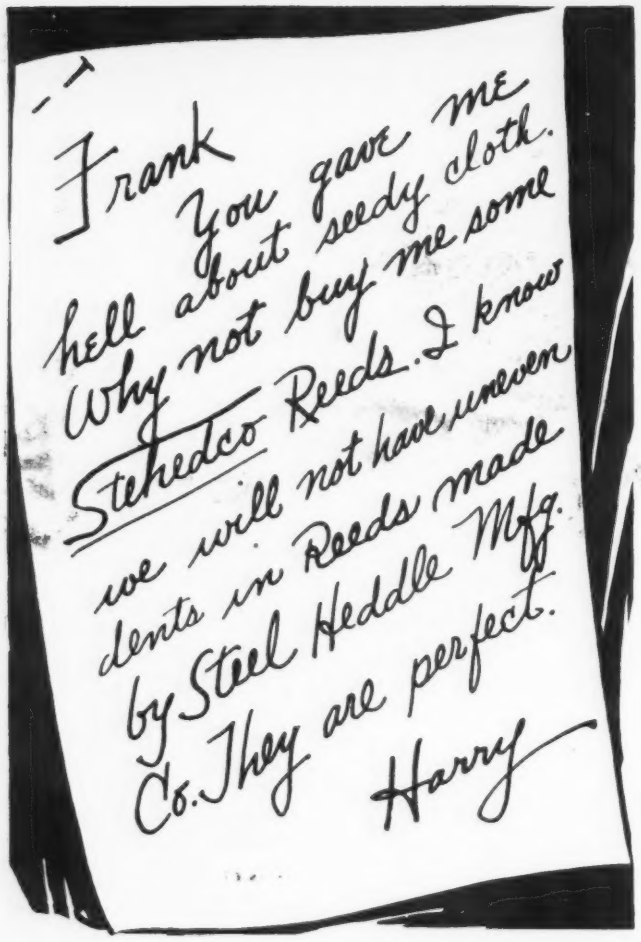
PQ SILICATES OF SODA


Frank
You gave me hell about seedy cloth. Why not buy me some Stehedco Reeds. I know we will not have uneven dents in Reeds made by Steel Heddle Mfg. Co. They are perfect.
Harry

STANDARD SILICATES

KIER BOILING

For better whites and level results, use a pound of STANDARD Grade 40 Silicate with each 3 to 5 lbs. of caustic in your kier boiling formula. Troublesome stains are eliminated and scarce chlorine is saved.

Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

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TEXTILE WORLD ANNUAL
FEBRUARY, 1943

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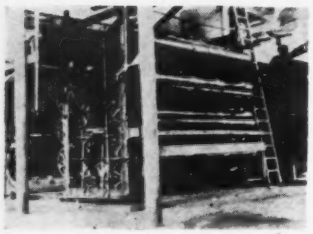

Can Dryer

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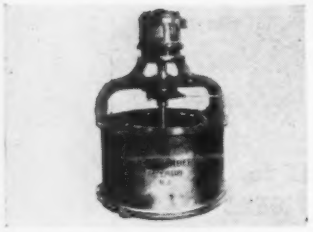
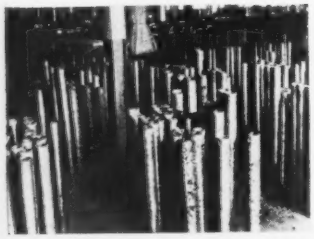
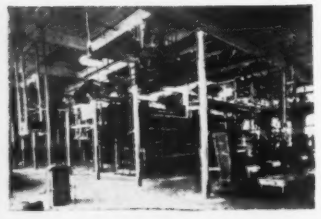


Hydro-extractor

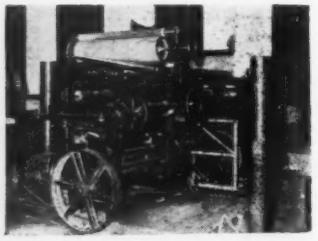


W Bore Copper Rolls

Calendars



Can Dryers
Simpson Batchers



Model E
Parks & Woolsen Doubler

A Four-fold Service to Speed the ext

PRINTING MACHINES

9—Rice, Barton & Fales 3 to 8 Color Print Machines, 40" to 64" wide, with color pans, mandrels, star and furnisher gears, etc.

PRINT MACHINE ACCESSORIES

Spare and repair parts for Rice, Barton & Fales Print Machines.

PRINT PADDER

1—3-Roll Print Padder, Dry Tower with Unit Heater.

AGERS

2—Agers, 6' wd. 9½' high, 30' long, B.B. brass rolls.

1—Textile Fin. Co. Ager, 5' x 18', with 50" brass rolls.

3—General Machine Co. Agers, 10', 20' and 30' long.

KETTLES

2—Textile 200-gal. Copper, Jacketed, Tilting, Agitated.

2—Textile 100-gal. Copper Steam Jacketed Tilting Agitated.

2—Textile 70-gal. Copper Steam Jacketed Tilting Agitated.

3—Textile Copper Steam Jacketed Tilting Agitated, 30, 40-50 gallons.

COLLOID MILLS

1—Charlotte Homogenizer or Colloid Mill.

1—10" Premier Colloid Mill.

1—Premier 5" Colloid Mill.

1—Premier 6" Colloid Paste Mill.

CALENDARS

2—Van Vlaanderen 3-Roll Ball Bearing Calendars, 50" Face.

2—Morrison 3-Roll Ball Bearing Calendars, 50" & 60" face.

1—Morrison 3-Roll 64" Ball Bearing Calendar.

1—60" Embossing Calendar.

1—Van Vlaanderen 46" Calendar.

PALMER QUETCHES

3—Morrison & Van Vlaanderen 60" & 72" Palmer Quetch Units.

DRYERS

3—National Loop Dryers, 28', 33' and 65" long. Revol. poles.

2—Proctor & Schwartz Airlay Dryers.

2—Van Vlaanderen 50" & 66", 5- & 7-Tier Dryer, fin heaters.

1—Phila. Dry Mach. Co. Hurricane Continuous Skein Dryer.

4—Frank Bailey Truck Dryers with extra trucks, for either skein and tubed yarn.

DYE JIGGS

1—Battery of 4-Butterworth 45" Stainless Steel Lined Dye Jiggs.

3—Werner 50" Stainless Steel Lined Jiggs.

1—Werner 57" Stainless Steel Lined Jigg.

CAN DRYERS

300—Drying Cans, 50" to 108" face, 23" to 80" dia. Either Vertical or Horizontal Arrangement.

DYEING & SCOURING MACHINES

1—Sargeant 3-Bowl Skein Scouring Machine.

10—Klauder-Weldon Skein Dyeing Machine, 20, 28, 30 sticks, hoist type.

1—Obermaier 400# Vertical Package Yarn Dyeing Machine, with Wash-Off Kettle and two motor driven Centrifugal Pumps.

29—Dye Becks, Morrison, Van Vlaanderen & General, 3' to 8', stainless steel and wood boxes.

TENTER FRAMES

2—Windsor & Jerauld 50' Frames with Morrison stainless steel clips, 44" & 54" wide.

3—Van Vlaanderen and Windsor & Jerauld 60' & 70' Frames.

1—Morrison 90' Tenter Frame.

FULLING MILLS

6—Rodney-Hunt Fulling Mills, gear drive.

1—Sample Fulling Mill.

TESTING MACHINES

1—Henry L. Scott Yarn testing machine.

OPEN WASHERS

1—Continuous Full Width Washer, consisting of 10 sections, 4 nips each section, 66" face rolls.

3—Rodney Hunt full width Washers, 66" x 12" rubber squeeze rolls.

1—60" Continuous Boil-Off Machine, steel tanks.

1—Grey Washer, 6-Nips, 60" wide, rubber rolls, iron tub.

1—4-Nip Grey Washer, 54" wide, brass & rubber rolls, iron tub.

STEAMERS

2—Steamers, 8' diameter by 20' long.

1—Steamer, 6' diameter by 12' long.

1—Devine Steam Jacketed Steamer, 5' dia. x 11' long.

ROPE SOAPERS

2—Rodney Hunt 10' Rope Soapers.

SHEARS

3—Parks & Woolson Double Blade Shear, 66" with list saving device.

1—Parks & Woolson 3-Blade Shear, 60½", with list saving device.

BLEACHING EQUIPMENT

10—Bleaching 4-5 ton Kiers, vomit type.

1—5-Ton Kier, circulating type, with external heater, pump and motor.

2—Lincoln Double Roll Chemical Squeeze Rolls.

2—Arlington Rope Squeezers with clutch pulley drive.

PACKAGING MACHINES

3—Parks & Woolson 46" & 66" Doubling, Reeling and Measuring Machines.

6—Elliot & Hall Flat Folders, 42" to 60" wide, various types.

2—Van Vlaanderen 60" Tubing Machines.

1—Parks & Woolson 42" Kaumagraph Machine.

BEAMERS-BATCHERS

4—Van Vlaanderen 50" & 55" Beamers.

5—Single & double Batchers.

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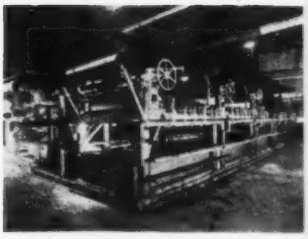


Open Washer

BRAIDING MACHINES

2—High Speed Braiding Machines. Braiding and Novelty Yarn Machines.

DECATERS

2—David Gessner & Parks & Woolson 72" and 48" wide, complete with Nash Pumps.

FINISHING MACHINES

18—Werner 50" Rubbing Machines.
1—Werner 50" Felt Disc Rubbing Machine.
1—Parks & Woolson 2-Roll Sanding Machine, 66" face.
8—Woonsocket & P. & W. Napping Machines, 60" to 90" wide, single & double acting.

EXTRACTORS

3—Van Vlaanderen 60" Rubber lined & Copper baskets.
1—50" Copper Basket Extractor, underdriven centrifugal.
10—Burkhardt, V.V. Fletcher, Tolhurst & Haring & Stephen, 48" machines, copper baskets.
4—Tolhurst & V.V. 40" to 44" Copper Lined baskets.
1—King & Gerber, 42" Extractor, copper basket, self balancing.
10—Tolhurst, American Laundry, Adams & Troy copper lined baskets, self balancing, 40", 32", 28", 26" and 20".

BUTTON BREAKERS

2—V.V. Button Breakers, 60" & 72", brass rolls.
1—60" Morrison Heavy Duty Button Breaker.

MERCERIZING RANGE

1—Complete Mercerizing Range.

OFFERING:

Complete Cotton Spinning Plant.

Complete Woolen Plant.

SPINNING FRAMES

35—P.S. Ring Spinning Frames, 160 spindles, 3½" pitch, 8" traverse, 1¾" ring, 4" front roll.
1—Saco-Lowell 200 spindle Cap Spinning Frame.
75—Fales & Jenks Spinning Frames, 256 spindles each.

PADDERS, MANGLES, QUETCHES

4—Textile 50" 2-Roll Dye Padders.
7—Butterworth & Textile 50" 2-Roll Mangles.
2—Textile 80" 2-Roll Mangles.
8—Butterworth & Morrison 2- & 3-Roll Quetches, 50", 60" & 72".

WATER PROCESSING EQUIPMENT

1—Permutit Water Softener, 103" high, 63" dia.
2—10' x 10' Vertical Softeners, zeolite piping, valves, meters and fittings.
2—Pressure Sand Filters, 8' dia. x 20' lg., complete with pipe connections, valves and fittings.
2—Water Softeners, 8' dia., 9' & 12½' lg.
2—Vertical Zeolite Softeners, 14' high, 6' dia.
2—8' x 20' Permutit Filters.
3—Horizontal Water Filters, 13 x 9.
2—Vertical Water Filters, 11' x 8'.
1—Vertical Water Softener, 12' x 8'.
2—Horizontal Water Softeners, 11' x 7'.
1—Gould Pump, 11" x 12"; piston type.

SINGEING MACHINES

1—80" 2-Burner Singeing Machine.
1—60" Singeing Machine.

VACUUM PUMPS

2—#3 Nash Hytor Vacuum Pumps.
1—#2 Nash Hytor Vacuum Pump.

SEWING MACHINES

10—Merrow 60D3B & 60ABB Sewing Machines, on portable stands and on Dinsmore Tracks.
10—Singer Sewing Machines, Style 81-3 & 6348.
150—Union Specials, style 1200, 3000.
4—American Ravellers.
25—Metropolitan Sewing Machines.

TANKS

10—Rubber Lined Tanks, 200 to 1000 gallon capacity.

KNITTING MACHINES

8—Scott & Williams Interlocking Machines.
6—Wildman Rib Body Machines.
15—Tompkins 2 & 3-cylinder Knitting Machines.

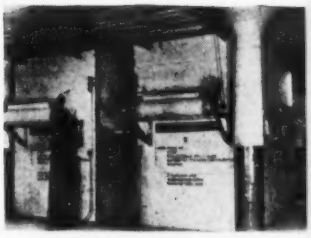
LOOMS

30—Crompton & Knowles 92" Blanket Looms, 4 x 1.
25—Draper Modified "D" Looms, Duck, 45" wide.
100—Crompton & Knowles 82" 4 x 1 Automatic Looms.

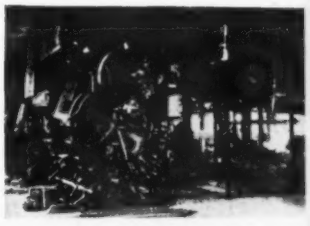
PRESSES

1—Gessner 72" Wool Press, steam heated cylinder, motor driven.
1—Baling Press.
1—Butterworth Hydraulic Press.

Miscl: Scutchers, Expanders, Generator Sets, Trucks, Air Receivers, Rubber Lined Tanks, Modine Heaters, Unit Heaters, Motors, Exhaust Fans, Pleaters, Mandrels, doctor blades, gears, lathes, portable agitators, accumulators, etc.

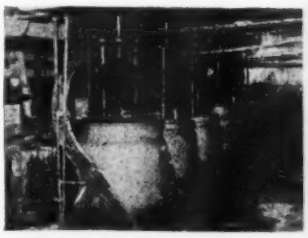


Print Machine Dryers



Ten-Color Print Machine

Vat Ager



Jacketed Copper Kettles

Hydro-extractor

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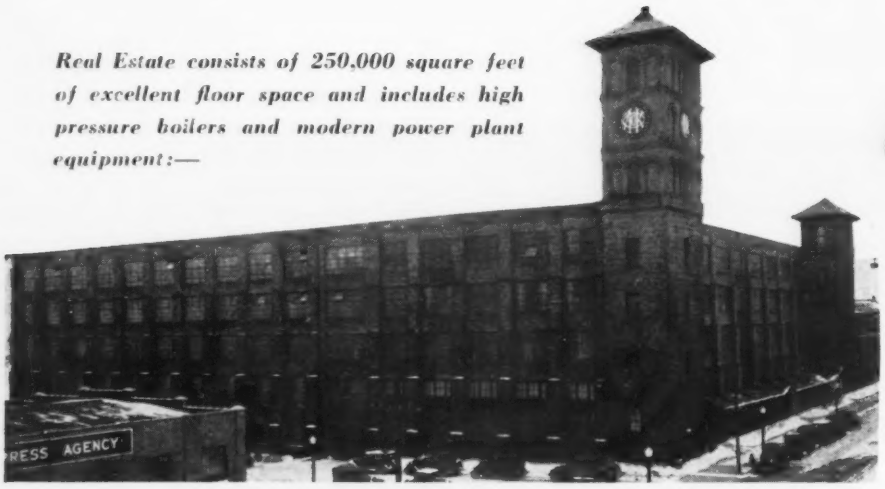

Amazon Knitting Mills

Complete Plant of

AMAZON KNITTING MILLS

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COTTON YARN MILL
21,000 SPINDLES

2—H & B & Kitson openers and breakers and pickers

48—H & B Cards

120—Deliveries H & B Drawing H & B Slubbers, Intermediate, Speeders, and Twisters

8,000—Spindle H & B Tape Drive Spinning

13,000—Spindle H & B Band Drive Spinning

4—Foster H 102 Cone Winders

American Moistering Co. Humidification System

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Butterworth, Monel Metal dye Kettles, Permutit Water Softeners, and Filters, Kiers, Squeezers, Dryers.

COMPLETE PAPER BOX DEP'T

Machine Shop — Supplies — Motors Electrical Equipment, Scales — General Plant Equipment.

KNITTING

300—Knitting Machines, Tubular Ri bers, Scott & Williams, Wildma Cooper, Tompkins, Nye & Tredeg All equipped with Electric St motors and Veeder Root counte

$25,000 Inventory New Dial and Cyl der Needles.

12—Raschel Full Width Knitters

107—New England Butt Braiders

4—Grand Rapids Tubular Machine

2—Davis and Furber Nappers Roll-80"

4—Cloth Cutting, Folding, and Si ting Machines.

SEWING

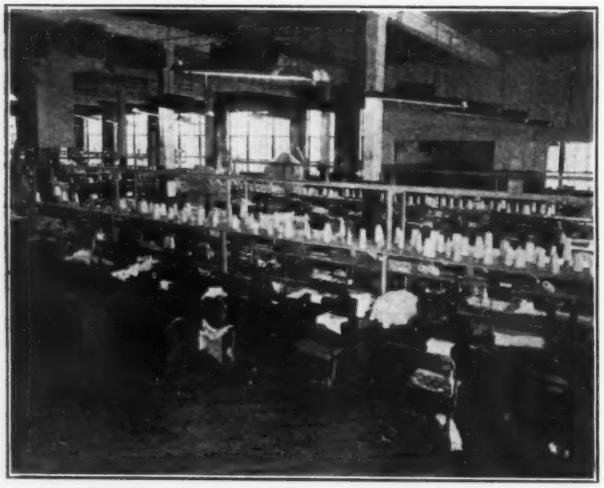
400—Sewing Machines, Union Speci Union Button, Singer, Wilcox Gibbs, Metropolitan, Merrow Rose Label

7—Eastman Cloth Cutters

Steam pressing Units, Packing Tabl Marking machines.

$10,000 Inventory New Sewing m chine parts and Needles.

Wildman Knitters



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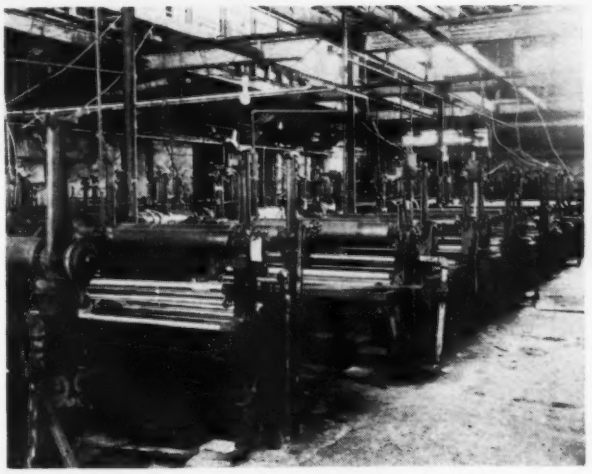


Van Vlaanderen Automatic Tensionless Jigs

DYEING

2—Van Vlaanderen, Werner and Rice, Barton Stainless Dye Jigs

2—Van Vlaanderen, Werner, General Dye Becks 4'-19'

2—60" Van Vlaanderen and Tolhurst Centrifugal Extractors

6—Butterworth and Textile Rubber Rolls dye padders 45"-60"

FINISHING

5—Perkins and Butterworth Hydraulic Calenders 60 to 100 ton, 2 and 3 roll

3—Van Vlaanderen and Morrison Finishing Calenders. 50" to 60", Motor Drive

2—King and Gerber Embossing Calenders.

3—Van Vlaanderen and Morrison Palmer Tenter units with 40' to 60' Tenter Frames

2—Van Vlaanderen 60' Tenter Frames —Stainless Clips

BUTTON BREAKER

1—Morrison 60" Button Breaker, Brass Rolls, Brass Buttons, Geared to Motor

DRYERS

1—National 100" Continuous Loop Dryer, 10" Fan with Air Fin Heaters

2—Textile 13 Can dryers

DECATERS

2—Parks & Woolson decaters

PACKING

11—Werner high speed Tubers

2—Van Vlaanderen Tubers and doublers

2—E & H Flat Folders

5—Eastwood and V. V. Raw Goods folders

2—Van Vlaanderen Beaming and Roll up machines

4—Werner Examining and measuring machines

6—Merrow Sewing machines.

POWER EQUIPMENT

1500 KW Turbo Generator Set

200 KW Motor Generator Set

MACHINE SHOP

1—Fifield Lathe, 48" swing, 18' bed

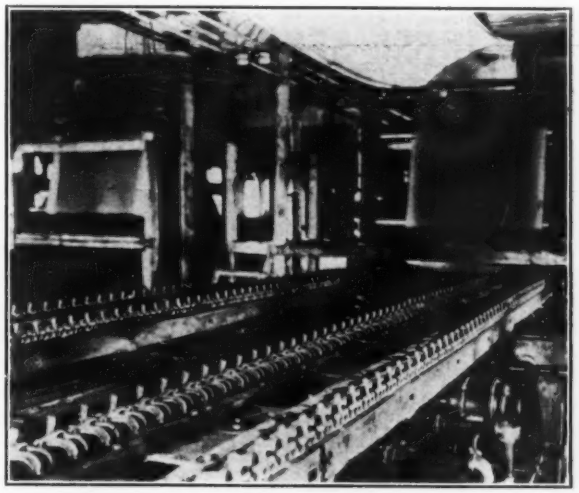
1—Star Lathe, 14" swing, 3' bed

1—Blaisdell Lathe, 18", 7' bed.

1—Brown & Sharpe Miller

2—Planers, Drill Presses, etc.

Modern Office Furniture & Equipment.



Van Vlaanderen Palmer Tenter Unit

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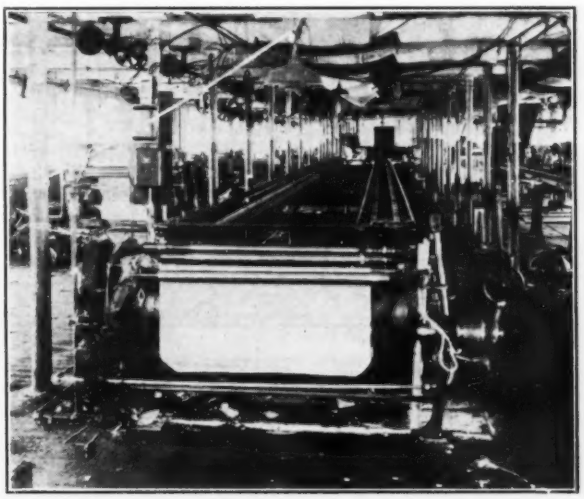

Van Vlaanderen Tenter Frame

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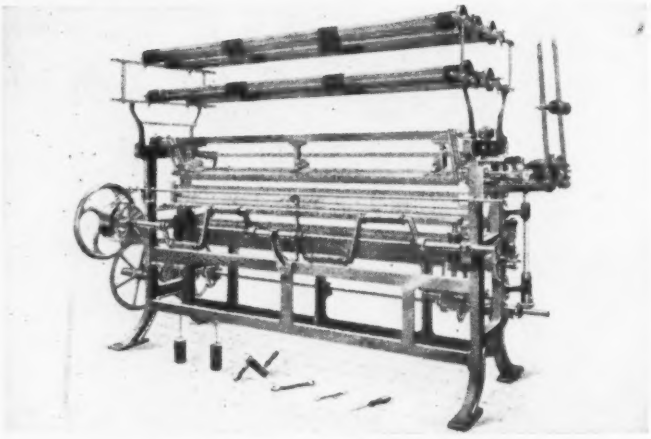

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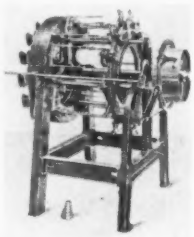
TWISTING MACHINES

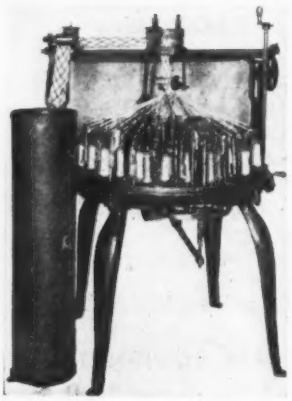
6—Haskel Dawes 8"x10" Formers 2 sp. ea.
2—Haskel Dawes 12"x14" Formers 2 sp. ea.
1—Haskel Dawes 4 Ply Rope Layer
1—Haskel Dawes 5"x7" 12 sp. Twister
1—Brownell Flyer Twister 36 sp. 5"x6"
4—Hanking Machines
1—3 Spindle Ruf Twister
1—2 sp. Sgritta Twister 10"x10" spools
2—12 spindle Ruf flyer twisters
1—Ruf make 48 spindle Guimp machine



WINDING MACHINES

7—Ball Winding Machines 8" Gauge 12 sp.
11—Ball Winding Machines 5" Gauge 12 sp.
1—Judelson Cloth Cutting Machine $100.
40—Universal #50 Tube and Cone Winders
4—Luther Single Brush Dressing Machines
2—Foster make, 40 spindle Skein to tube winders 6" package
100,000 Metal head spools 3" head 7" traverse 3¢ each
2—Whitin Quillers. 378 spindles each

ELASTIC TAPE, DRESS TRIMMING BRAIDING MACHINES. ALL SIZES.

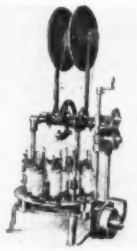


BRAIDING MACHINES

3—12 Spindle N.E.B. Sash Cord Braiders
13—9 Carrier N.E.B. Solid Coard Braiders
6—12 Carrier #4 Butt Braiders 7" Horn gears
4—16 Carrier #4 Butt Braiders 7" Horn gears
80—24 Carrier N.E. Butt Rug Braiders
20—Textile & Butt make 40 Carrier Braiders
15—48 Carrier Textile make Braiders, round
20—Paragon High Speed wire Braiders 16 Carr.
1—8 carrier Packing Braider N.E. Butt
25—12 Carrier #1 Butt Braiders
10—9 Carrier Butt flat braiders
40—41 carrier #1 N.E. Butt Braiders
300—Textile make Flat Braiders, all sizes from 41 up to 97 carriers

30—Striper Textile make Braiders 12x24x12s
2—11 rimes 9 Textile Striper Braiders
16—Textile make, Platter Braiders
10—Textile make, 16 Carr. Braiders
40—Textile make, 24 Carr. Braiders
1—Textile make, 32 Carr. Braiders
2—32x36 carrier 2 deck Butt Braiders
40—Compound 16x16x20 and 20x20x24 carrier Textile make Braiders
3—48 carrier Textile make, Wire Braiders
10—20 carrier #1 Butt Braiders
20—Square and president Butt Braiders, new.
12—Vienna Oval Butt Braiders
20—8 carrier #2 Butt Braiders
30—24 carrier #1 Butt Braiders
5—Textile make, Drive tables, with gears, etc.
20—25 carrier #1 Butt Braiders

ROUND BRAIDERS — SMALL With short legs, 16-Carrier No. 2 Braider FOR BRAIDING ELASTIC AND OTHER ROUND BRAIDED CORDS.



KNITTING MACHINES

2—72" Siefert Jacquard Rachelle Knitting Machines
20—60" Lindlay make Rachelle Knitting Machines
10—Knitting machines for making Fringes of all types for rugs, carpets, bath mats, etc.
2—Sample Rachelle Knitters

All the above priced reasonably for quick sales. Quite a few of these knitting and braiding machines are set up on our floors, where all the machines are located. What we mean by set up, is the machines are in operating conditions with material such as nets, rugs, dish cloths, cords, flat, plain and fancy braids in them, for inspection and operation.

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a. The location and purchase of extra units for your present production lines, to enable you to step up production to war-time requirements in the shortest possible time, at the lowest possible capital investment. . . . b. *additional equipment* to replace worn out or unsuitable units and *keep* up to top production. . . . c. machinery to equip new branch mills. . . . or, d. equipment to enable you to expand future production—covering practically every type of textile mill machine—from a single unit to a complete mill.

2. Liquidating . . .

An important phase of our service is the sale of complete mills. We are constantly liquidating equipment with a minimum of delay. Our success in this field can be traced to our wide contacts throughout the industry.

3. Exporting . . .

We are familiar with requirements of textile mills in many overseas countries—and all government limitations involved in these transactions—and have been unusually successful in selling a large volume of American mill machinery in these markets.

4. Mill Supplies . . .

As part of our complete service to clients, we offer mill supplies, machine accessories and repair parts to enable them to maintain present equipment at peak performance.

5. Inspecting . . .

An integral part of our complete service. All used textile mill equipment we own, or purchase for specific requirements, is thoroughly inspected by competent mill machinery men *before shipment* to insure guaranteed performance when the machine is set up on your production line. You can place your orders with MLC with full confidence that the machinery you buy will be *as specified,* . . . and that it will be delivered when promised . . . at the price quoted.

6. Appraisal . . .

This service is available to all MLC clients who wish to sell, or buy, textile mill equipment. With a background of 16 years' continuous service to mills throughout the textile industry. We are in daily touch with the market. We know mill machinery values.

7. Additional Services . . .

MLC does not restrict its service to textile mill machinery. Through our many contacts we have recently been able to purchase: power plants, cranes, shovels, machine tools, etc., needed by our clients for new plant or maintenance.

WE NEED EQUIPMENT FOR VITAL WAR ORDERS

If you have any idle mill equipment you can perform a patriotic duty. The proceeds will help purchase equipment you may need urgently by sending us details at once. Now is the time to check up on your used mill machinery needs—or surplus. When you have determined your needs, call on us. If possible we suggest that you schedule your requirements six months ahead. This will give us time to locate—and hold for you—any equipment not in our current stocks. A complete list of equipment currently available is yours on request or submit your requirements and we will advise immediately what we have to offer.

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We still buy and sell Textile Machinery for our large clientele.

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MILL SUPPLIES

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READY FOR DELIVERY FROM OUR OWN STOCK:

WE PROCURE

Items needed for war effort and not in stock.
SEND US YOUR INQUIRIES

DYEING MACHINERY

1—Butterworth Squeezer—1 Rubber, one Brass Roll 16″x18″
1—6 Compartment continuous Dyeing Machine, Boxes Monel Metallined Rubber Rolls 22″x10″ diam. suitable for narrow fabrics
1—50″ 2 Roll Pad, Brass and Rubber Rolls
1—50″ 2 Roll Pad, Rubber and Rubber Rolls
1—50″ V. Vlanderen Roll Extractor with 7½ HP Motor
2—42″ Arlington Scutchers (almost new)
2—45″ High Ceiling Swing Folders
1—72″ 5 Burner Gas Singer
2—Merrow Sewing Machines for Butt-Seam (reconstructed)
3—50″ Cocker Iron Jigs
2—66″ Jigs, Monel Metallined
2—Dinsmore Power Sewing Machines

FINISHING MACHINERY

1—Pair of Electric Guiders with Electric Eyes
18—Single Slitters—10 with Motor
1—Universal Electric Rotary Cutter 4″ diam. Knife
1—Set of Textile Dry Cans 76″ wide—II Copper Cans
1—Knuckle Press
1—V. V. Mixer 42″x21″x22″ with 15 HP Motor, all Ballbearing
1—50″ Jumbo Calender 6 Bowls
1—48″ Calender 4 Bowls
1—50″ Calender 5 Bowls (Textile)
1—42″ Calender 3 Bowls
1—66″ Watermangle 5 Bowls—3 brass—2 husk
1—40″ Schoefield Doubler & Rollers
1—42″ Schoefield Doubler & Rollers
2—66″ Windle Doubler & Rollers
1—44″ P & W Examining & Rolling Machine, var. Speed & Motor
1—36″ Hermas Rewinder
1—Dinsmore Power Sewing Machine with Union Special Head
1—96″ Woonsocket Felter with 22 Rolls Single acting
1—72″ Montford Shear equipped with 3 Knives
2—45″ Dinsmore Railway Sewing Machines
2—50″ V. V. Button Breakers B. B. Brass Rolls
1—54″ Textile Embossing Machine—with spare Rolls
2—54″ V. V. Embossing Machines—with spare rolls
1—47″ E & H Drop Fold Hooker
1—90″ Butterworth Swing Tenter
1—50″ P & W Winder with Kaumograph

PRINTING MACHINERY, Etc.

1—40″ RB & F 5 Color Printing Machine
1—4 Can Horizontal Copper Dyer 60″ face 60″ diam.
1—3 Can Horizontal Copper Dryer 66″ face 60″ diam.
1—3 Gallon Copper Jacketed Kettle with Stand
1—80 Gallon Closed Brass Tank, ¾″ shell 25 lb. Pressure
6—Print Roll Trucks 4 roll capacity
1—100 gallon Jacketed Copper Kettle and Stand
2—50 Gallon Copper Jacketed Kettles in one stand
1—50″ Polishing Lathe

TENTER CHAINS

344—#99 Top-Opening Chain Brass Gate & Plate
600—V. Vlanderen Aluminum Clips, Stainless Steel Gate & Plate
450—#99 Top opening Clips, Brass Gate & Plate, copper inserts
540—W & J Bottom Opening Clips Brass Gate & Plate
1100—W & J #6 Bottom opening Clips, Brass Gate & Plate
1100—#99 Bottom opening clips, Brass Gates & Plates
380—W & J #2 Bottom Opening Clips, Brass Gates & Plates
380—Textile Bottom opening Clips, Brass Gates & Plates
200—#00 Top opening Clips, Brass Plates & Gates

ROLLS

51—54″ Copper and Brass Tube Rolls 8″ diam.
29—85″ Brass Tube Rolls 5½″ diam.
6—50″ Brass Tube Rolls 4″ diam.
6—60″ Brass Tube Rolls 3″ diam.
6—50″ Copper Tube Rolls 4″ diam.
1—65″ Brass covered Roll 14″ diam. stationary shaft
1—50″ Brass Mangle Roll ¾″ Brass cover, 18″ diam.
1—45″ Brass Mangle Roll 1½″ Brass cover, 20″ diam.
3—50″ Brass Rolls 10″ diam. ¾″ Brass cover
3—50″ Copper Rolls, 10″ diam. ⅝″ Copper cover
2—42″ Rubber Rolls 15″ diam. ⅞″ Rubber
1—52″ Rubber Roll ½″ soft Rubber
1—59″ Rubber Roll ½″ soft Rubber
1—19″ Rubber Squeeze roll ¾″ Rubber new
1—12″ Rubber Roll 8″ diam. new (Squeeze roll)
14—76″ Rubber Rolls 8″ diam.
2—100″ Rubber Rolls 8″ diam.
1—79″ Rubber Roll 9″ diam.
3—56″ Steel Rolls 1″ Tube Stock 9″ diam.
4—63″ Steel Rolls 1″ Tube Stock 9″ diam.
2—63″ Steel Rolls 1″ Tube Stock 9″ diam. Chromium plated
1—65″ Steel Rolls 14″ diam.
2—105″ Steel Rolls 8″ diam.
8—50″ Schreiner Steel rolls engraved
8—50″ Smooth Steel Calender rolls to fit Schreiner
20—Calender Paper, Husk & Cotton Rolls from 42″ to 54″

RAYON SLASHERS

1—50″ V. Vlanderen with 3 Copper Tinned Dry Cans
1—60″ V. Vlanderen with 3 Copper Tinned Dry Cans
1—9 Reel Zell Air Slasher with Warp Tension control, Late Model
2—12 Reel Zell Air Slasher with Warp Tension control, Late Model

MISCELLANEOUS

2—Double end Grinders
2—Single Stone Grinders
1—High Pressure Gas Blower #2 (Am. Furnace)
1—High Pressure Blower #3 (Am. Furnace)
3—Portable Platform Scales
1—5 Ton Electric Hoist with Rails
2—Permutit continuous Blow off Cylinders
2—Lewellen Drives #10 & 11
1—Duplex Air Compressor (Chicago Pn. Tool Co.) 280 Cft. p.m.
1—Electric Hand Saw
1—Universal 12 lb. Electric Iron
1—Envelope Sealer Model G
1—Defiance Electr. Check Writer
1—Horizontal Post Drill
1—Galv. Steam Box for Yarns
6—Steel-Band Strapping Tools
1—Indigo Grinder
1—Booth Dry Feeder
1—Eppenbach Colloidal Mill
1—Lot of Carbon Brushes for El. Generators and Motors (new)
1—Lot of Fitting Gears for Printing Machines
1—Electr. Cooler for Drinking Water
1—Lot of Misc. Steam Traps 1 to 2″
1—Lot of Gate Valves & Blow-off Valves 1 to 6″
1—Lot of 50 Roller Chains ¼″ to 3″ pitch
1—Lot of Large Motor Pulleys, Cork insert
1—Lot of Assorted Spur & Bevel Gears, Sprockets for Link Chains
3—Copper Sleeves for Rolls 60″ long 9″ diam.
1—Lot of Sheaves for Reeves Drives 12 to 18″ diam.
1—4″ Centrifugal Pump
1—6″ Centrifugal Pump (Ing. Rand) 3000 gal. Cap. per min.
1—5″ Centrifugal Pump
3—Plating Generators 300 to 1300 Amps.
1—40 HP—DC. Motor 230V.
1—Lot of AC Motors ½ HP to 20HP 550 and 220 V.
1—40 HP—Brs. Motor and Control
2—Hytr Nash #3 Vacuum Pumps
1—Hytr Nash #2 Vacuum Pumps
8—Exhaust Fans from 30 to 40″ diam.
1—#6 Blower

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1 Tomlinson Waste Machine
1 Kitson Card & Picker Waste Cleaner
2 H & B Condensers
1 D & F Fearnaught Mixing Picker 48", all iron const., table feed, belt drive
1 S-L 12" Coiler
5 Whitin 10" Coilers
1 Sargent Yarn Conditioner, motor drive 220 volts
2 D&F Dressing Reels 108", brass plates, spool racks, single beamers
1 Warper 54" face cylinder, T.C. Entwistle
1 C&M 72" Cloth Cradle
99 Draper Model E aut. Looms 47½" R.S. belt drive, aux. shafts 5 harness cams, Lacey Tops
1 Sjostrom Conditioning machine (New)
2 40" Brass Barrell Expanders
180 Porcelain Bleachery Rings 5" eye
1 Sturtevant #00 Exhaust
1 Sturtevant #0 Exhaust
1 Blower, 10½" intake, 10½" outlet, belt drive
1 #1 Reeves Drive, ratio 3-1
2 #4 Reeves Drives ratio 2-1
1 Diagraph Stencil Cutter ¾"
1 Burks Super-Turbine Pump, 110/220 volt motor, Decatur Pump Co.
1 Pittsburg Aut. Gas Water Heater size 55
1 Power Hack Saw 12"
1 36" Band Saw
1 D.E. Whitin Gear Shaper
1 American 12" Wood Shaper
1 8" double end Buffer, direct motor drive 220 volts

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OF COTTON, WOOL, SILK, AND SYNTHETIC FIBRES

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Providence Machine Co. Slubbers, 11x5½.
Dobson & Barlow Intermediate, 10x5, 112 spindles, 7" gauge, age 1922
Howard & Bullough Drawing Frames, 6 deliveries each
Whitin Sliver Lap Machine with table and darby back.
Perry Brothers Combers, with one extra large circle and two extra small circles.
Prince Smith Single head Can Gill Boxes.
Hall-Stells Double head Can Gill Box.
Halls-Stells Double head Ball Gill Box.
Prince Smith Single head Ball Gill Box.
Saco-Lowell Intersecting Gills, 2 head units.
Foster #12 Cheese Winders.
Foster #30 Cone Winders, 80 spindles each. With extra 40 spindle cheese attachments.
Foster #21A Cheese Winders.
Double Deck Atwood Winders, individually motor driven.
72" Sipp Eastwood Warpers with creels, individually motor driven.
Crompton & Knowles Woolen Looms, 100" reed space, 4x4, 30 harness direct motor driven but without motors.
Worthington Vacuum Pumps, 12x12x12.
McCreary Nappers, 60" wide, 10 rolls each.
Parks & Woolson Combination Teasel Gig and Napper.
Smith Drum Dye Unit
Massachusetts 48" Blower with Blower Pipe.
Buffalo Duplex Conoidal Blower, Size 10.
Lot of Fibre Head Merkel Winder Bobbins.
An aggregate of Tubular Braiders, Soutache Braiders, etc.

Liquidators and Exporters — **Complete Plants Our Specialty**

FOR SALE

CARDING AND SPINNING MACHINERY

FLOCK CUTTER	Curtis & Marble
DUSTERS	Sargent 6'6" Cone, Metal ends Schofield, Box, 48"
GARNETTS	J. Smith, 3 Cyl. 30 x 60"
GRINDERS	Card and Napper, various sizes
LAPPER	120" Blamire
PICKERS	Gerry, 20" opening F. Franke & Co., 28" opening M. A. Furbush, 36" opening Sargent Multiplex, 36", Burr Sargent Wool Picker C & M 48" Fearnaught Mixing C & M 36" Atlas type Mixing

WARPING AND WINDING MACHINERY

QUILLERS	Whitin, 378 spindles, 2 and 2½" ga.
SPOOLERS	Worcester Comp. 6 Drum, 48 ends
WARPERS	72" to 133', Pin and Pinless
WINDERS	#50 Universal, rebuilt to your order #90 Universal, rebuilt to your order #180 Universal, 8 x 8 Super Coners Lever 20 and 40 Spindle Cop Lever Model #20 Cop Foster Model 30 Coner, 100 spindles Foster Model 12 Tuber, 100 spindles Foster Model 101 Coner, 100 spindles

WEAVING MACHINERY

BUTTS	
CARD CUTTERS	Royle, 600 hook, piano type
CHENILLE CUTTER	O. Lever
HARNESS FRAMES	80"
LOOMS	76" C & K 4 x 4 box, 25 harn. 82" C & K 4 x 4 box, 25 harn. 92" C & K 4 x 4 box, 25 harn. 85" Knowles, Automatic
SPOOLS	4 x 6, wood 2⅞ x 3⅝" Sipp

DYEING AND FINISHING MACHINERY

BRUSHES	P & W 60" with steamer, 2 cyl. C & M 78" with steamer, 2 cyl.
CALENDER	Grand Rapids Knit Goods
CHINCHILLA	Kenyon, 66"
CONDITIONING	Sargent Filling Yarn Cond. S Jostrom, 4 section
DEWING	Steiner, 66"
DOUBLING AND FOLDING	Windle P & W, 66"
DRYERS	P & S, Overhead, 11' x 65'
EXTRACTORS	A. T. & M. Co. 36" underneath belt drive A. T. & M. Co. 42" underneath belt drive Tolhurst, 48" Tolhurst, 60" Gessner Vacuum and pump Werner Vacuum, single pump
FOLDER	E & H 66" wide, Yard folder
FRINGING MCHS.	Rehfus
MEASURING AND INSPECTING	P & W 60" mchs.
MERCERIZERS	Smith Drum, 16 arm & 24 arm
NAPPERS	Woonsocket 82", D. A., 36 rolls Gessner, 72", S. A., 16 rolls Gessner, 72", S. A., 20 rolls
PRESSES	Gessner, 66", Heavy duty, Jumbo type Gessner, 72", Century type Gessner, 80", Century type E. Gessner, 66"
ROLLING	Simpson, 40", Cloth Rolling Mch., 24" pkg.
ROLLING AND MEASURING	P & W, Double C & M, 36", Open 60" Open
SEMI-DECATING	P & W 72", double cylinder
SHEARS	P & W 66", Model A, 2 cyl. P & W 66", Model B, 2 cyl. C & M 66", 2 cyl. P & W 66", for Plush C & M 66", for Plush Hermas 58", 4 cyl.
SINGER	C & M 64", 2 burner, Gas
SPLITTER	Powers, Plush Cloth
STEAM FINISH	2 cyl. Cloth

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- Printing Machines
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- Calenders
- Quetches
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- Tendering Frames
- Beamers & Tubers
- Doubling & Folding

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3—60" Double Cylinder Worsted Cards
4—Lister Nip Combs
Miscellaneous lot Comb Circles.
1—Complete Card Clothing Winch
1—Roy Floor Card Grinder 60" wide
1—Roy Traverse Grinder
Woolen Waste Cards 50"x50", 2 cards per set
2—Atlas Pickers
2—12 Ball Creels
1—48" Tolhurst Extractor
1—42" Tolhurst Extractor
8—60" Cam Plush Looms
1—Complete Unit French Drawing & Spinning
1—Narrow Fabric Plant
1—500 KW Generator & Steam Turbine

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FOR SALE—Hosiery Mill Machinery

We specialize in Scott & Williams, Reading, Banner, Wildman, Smith-Drum, Paramount and other types of hosiery mill equipment for seamless and full fashioned mills. Special attention to export trade.

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McKITTRICK'S
OWN and Offer A LARGE STOCK of used TEXTILE MACHINERY

CARDING—WOOLEN

1—All iron 3 cyl 60" x 48" dia Woolen Card with Cashiko 96 end Tape Condenser.
1—All iron 3 cyl 60" x 50" dia Woolen Card with Whitin 96 end Tape Condenser; wood workers.
1—Whitin 60" Tape Condenser for 128 ends.
1—Cashiko 60" Tape Condenser for 128 ends.
1—Rich-Hartmann 60" Tape Condenser for 96 ends; with 34" dia doffer cyl.
4—National 48" Tape Condensers for 96 ends. (36" iron doffers for two of them.)
3—Harwood Bramwell 60" Card Feeds.
2—Apperly Intermediate Feeds for 60" Cards.
1—B. S. Roy 72" Traverse Grinder.
Large Lot Iron card cyls, 72" wide.
1—Harwood Bramwell 32" Picker Feed.

FOSTER WINDERS

2—Model #30, 100 spdl Cone Winders, Howland Taper.
1—Model #12, 80 spdl Wood tube winder, 6" tr.
1—Model #12, 50 spdl Paper tube winder, 6" tr.
1—Model #12, 100 spdl Wood Tube winder, 7" tr.
50,000 Used 6" tr. NuTaper paper Cones.

FINISHING

1—P & W 66½" Model A Double Shear, rebuilt by P & W. List saving.
1—C & M 63½" Single Shear, excellent.
4—P & W 66½" Model A Double Shears, both plain and list saving rests.
1—P & W 42½" Model A Double Shear, plain rests.
1—Volke 64" Dewing Machine.
1—Gessner Pressure Decater or Vacuum Steaming Machine, steaming chamber 77" long x 27" dia inside. Nash #1 vacuum pump.
2—D & F 14 roll x 80" Single Acting Nappers.
1—Windle Doubling and Winding Machine 66½".
1—C & M 78" 2 cyl Cloth Brushing and Steaming Machine, new condition.
1—P & W 2 cyl 63" Cloth Brushing and Steaming Machine.
3—Gessner 66" Rotary Cloth Presses, excellent.

MULES—WOOLEN

2—J. & B Mules 240 spdls x 1-¾" gauge. New spdls.
1—J. & B Mule 270 spdls x 2" gauge.
We have large quantities of mule bobbins for sale.

WEAVING

5—C & K VERIBEST 92", 4 x 4 box, 25 harness roller bearing Looms arranged for motor drive.
6—C & K 72", 4 x 4 box, 20 harness Worsted Looms, arranged for motor drive.
1—C & K 82", 4 x 4 box, 30 harness heavy worsted loom.
24—Veeder-Root 2-shift Reset Type Pick Clocks.
50—C & K 82" loom beams.
80—C & K 87" Loom Beams.
200—Loom Harness Frames, 90".

WORSTED YARN MACHINERY

4— H & S 144 spdl x 3½" p. Cap Spinning frames.
4—S.L. 200 spdl x 3½" p. Cap Trap Twisters.
2—S.L. 200 spdl x 5" p. x 2½" Ring Twisters with traps, single roll type, motor driven, year 1924; bobbins available.
3—H & S 192 spdl x 3½" p. Cap Trap Twisters.
9—H & S 168 spdl x 4" p. Cap Trap Twisters.
1—Sargent Yarn Conditioning Machine.

This is only a partial list of the machinery and equipment we own and offer for sale. Send us your inquiries, also send listings of material for sale.

APPRAISALS – LIQUIDATIONS

Est. 1922 **FRANK G. W. McKITTRICK CO.** *Inc. 1935*

USED WOOLEN AND WORSTED MACHINERY

60 FLETCHER ST. **Phone Lowell 6391** **LOWELL, MASS.**

TEXTILE MACHINERY
FOR SALE

1—Parkhurst 30" Burr Picker
1—Sargent Duplex Burr Picker 36"
1—Saco-Lowell single head, single balling gill box, ½" p.
2—Saco-Lowell single head double balling gill boxes, ⅜" p.
1—Taylor-Wadsworth double head double balling gill box, ⅜" p.
3—P.S. 6 spindle Draw Boxes 14x9 bobbin
1—P.S. 12 spindle Draw Box 12x6 bobbin
6—P.S. 36 spindle Flyer Rovers 6x3
1—P.S. 80 spindle Cone Rover 10x5
2—P.S. 60 spindle Cone Rovers 10x5
4—P.S. 80 spindle Cone Rovers 8x4
4—Platt Bros. Worsted Mules 600 spindles
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Also complete a Bradford System Worsted Spinning Plant 1000 cap spindles, Carding, Combing Preparatory machinery 44 Automatic Draper Looms 76" wide.

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48" Extractor or Whizzer with Head Room of 7'6" or less and motor driven from side.
Sewing Machines for Blanket Binding like Singer-112 W or 22 W or 81-60.
Roving Cams—12" dia. by 32" to 36" high.

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3—Proctor & Schwartz Pickers—ball bearing.
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60" Van Vlaanderen; 60" Zephyr, open top; 54" Schaun and Ulinger; 48" American, open top; 40" American, belted motor drive; 28" Smith drum, direct motor drive; also ten 20" to 30" solid curb extractors, both belt and motor drive.

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One C & K Gusken or Conner double shuttle plush loom. Must be absolutely complete including beams. Quote lowest price.

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For JACQUARD CARDS
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1—1214 Cu. Ft.—Sull Angle 100#.
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Able to handle all manufacturing and technical problems in all departments of several mills weaving and processing all yarns. Must be a digger—definitely not an office man. Please answer only if you have successfully held similar position with progressive, successful manufacturer. We are doing a good percentage of war work but maintaining civilian activities. Please outline experience fully with salaries received on previous and present jobs.

P-500, Textile World
330 West 42nd Street, New York City

2—mechanical engineers experienced in plant layout, machine design, and general industrial engineering.

1—graduate plant engineer experienced in handling engineering and maintenance departments supervision.

1—production manager equipped to handle manufacturing, receiving, and shipping.

1—graduate chemist experienced in general production, mechanical and quality control.

The above men preferably between the ages of 35 & 40. These jobs are not of a temporary nature and are with a well established firm located near Chicago, Illinois.

P-510, Textile World
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Wanted

Superintendent of Worsteds

A textile company seeks a superintendent for its mill in New England employing from 2000 to 3000 operators. The products involve all processes for worsteds from wool in grease through burling and mending. The applicant must fully know them and when employed he must demonstrate his ability toward one constant objective: better quality at lower cost.

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P-512, Textile World
330 West 42nd St., New York, N. Y.

WANTED

Production man for large finishing plant. Must have executive ability.

P-504, Textile World
330 West 42nd Street, New York, N. Y.

POSITIONS VACANT

OVERSEER of Spinning and Warping for a fancy goods mill. Must be a Textile School graduate with several years of practical experience. Furnish draft status and full details in letter of application. P-501, Textile World, 520 N. Michigan Ave., Chicago Ill.

WARPING and sizing foreman. Must be thoroughly experienced on most modern equipment. P-502, Textile World, 330 W. 42nd St., New York, N. Y.

ENGINEER for western woolen mill with record of 40 years continuous operation. Should be familiar with steam and electrical engineering as well as textile machinery. Good prospects right man. Write fully experience and education, also salary, etc. P-506, Textile World, 68 Post St., San Francisco, Cal.

TIME STUDY MAN. Capable of managing time study department in textile plant. Should be proficient in cost accounting. Must be executive type with knowledge of manufacture of woolen and cotton goods. P-518, Textile World, 330 W. 42nd St., New York, N. Y.

PERSONNEL MANAGER. Must be capable managing personnel department in plant with 700 employees. Experience in textile industry desired but not required. In answering please give age, experience, references and salary expected. P-519, Textile World, 330 W. 42nd St., New York, N. Y.

EXPERIENCED PRODUCTION FOREMAN cotton textile mill. Must be capable to act as assistant supervisor from bale breaker through looms. Established mill in process of expansion now manufacturing Osnaburg. Give full details as to experience, draft status, and salary expected. Also have positions open for loom fixers. Write P. O. Box 4647, Houston, Texas.

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INDUSTRIAL ENGINEER desires position. 12 years textile efficiency work and head of production planning department for large textile mill. Experienced with production planning, inventory control, mill systems, cost accounting, and office detail. Residing in Massachusetts. Will go anywhere for opportunity. University graduate. PW-515, Textile World, 330 W. 42nd St., New York, N. Y.

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NARROW WOVEN fabrics expert. College graduate, successful designer and technician, experience in mill organization, cost accounting etc. Know Government fabrics. Not required by draft. Now employed desires change. PW-516, Textile World, 330 W. 42nd St., New York, N. Y.

MAN with 25 years experience entirely on Narrow fabric, desires position as overseer or assistant overseer or some other position in Narrow fabric. David Angelo, 1062 Charles St., North Providence, R. I.

DESIGNER will give up soft job for one requiring intelligence, initiative and plenty of hard work. Age 37, married, two children. 20 years experience in designing and manufacture of woolen and worsted fabrics. Knowledge of cost accounting, production planning and material control. PW-509, Textile World, 330 W. 42nd St., New York, N. Y.

CAPABLE YOUNG MANAGER-Superintendent available April first. Technical education. Practical mill experience in plain or fancy weaving and rayon throwing. Expert loom man. Will go anywhere. PW-508, Textile World, 330 W. 42nd St., New York, N. Y.

POSITION WANTED woolen mill. Twenty years picker room experience, including twelve as department head. Complete knowledge, including machinery. PW-520, Textile World, 330 W. 42nd St., New York, N. Y.

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LONG ESTABLISHED New York selling agents need additional items. Any items from natural yarns to finished fabrics; regular production, closeouts or surplus stocks neatly handled on minimum commission or brokerage basis. All communications strictly confidential. BO-507, Textile World, 330 W. 42nd St., New York, N. Y.

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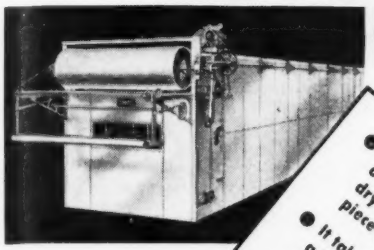
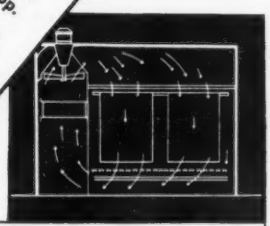


- This is a completely new type of automatic loop or festoon dryer for drying dyed or finished piece goods without tension.
- It takes goods as it comes out of a finishing quetch, or in the case of dyed goods, from a truck.
- The material is carried through the dryer while heated air, circulated at high velocity by fans of special Proctor design, is directed down into each loop.
- As the girls on which the goods is suspended move through the dryer, they revolve intermittently, so that no part of the goods is in contact with anything for any appreciable length of time.
- The New Proctor Loop Dryer assures perfectly uniform results and offers unheard-of capacity in a very compact unit.



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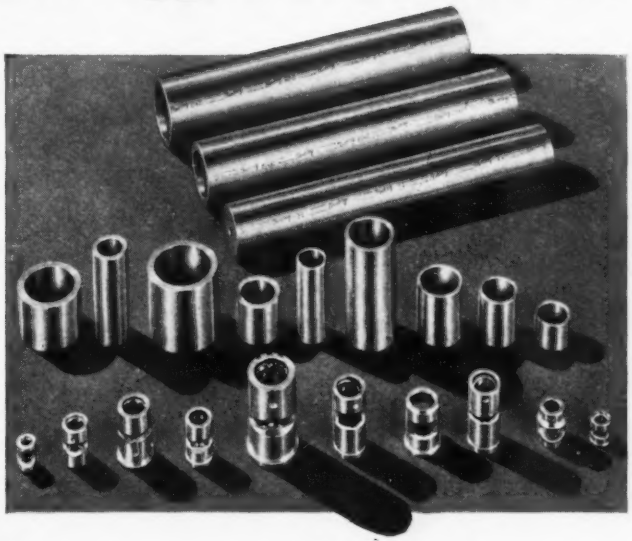

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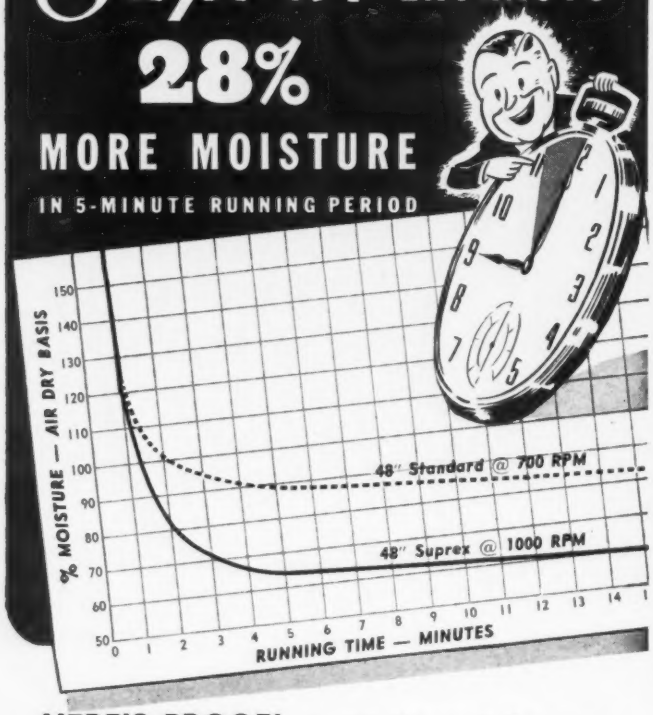
IN 5-MINUTE RUNNING PERIOD



HERE'S PROOF! A 48" "Suprex" Extractor operating at 1000 R.P.M. on cotton underwear tubing, reduced moisture content in the tubing to **65%** in **5** minutes.

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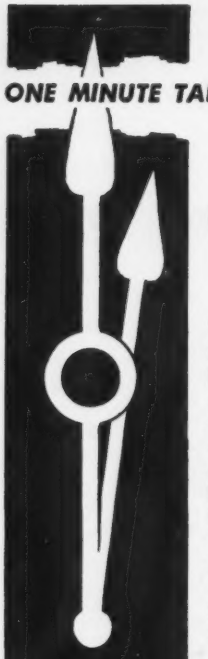
ONE MINUTE TALKS ON **WARTIME MAINTENANCE**



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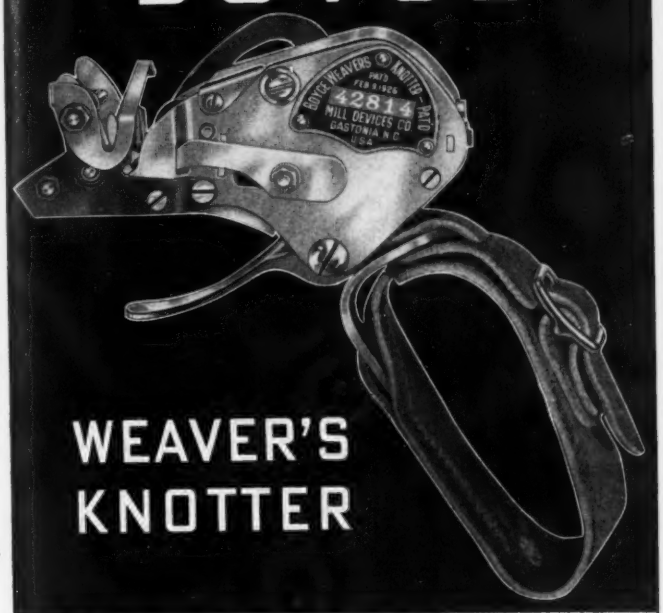

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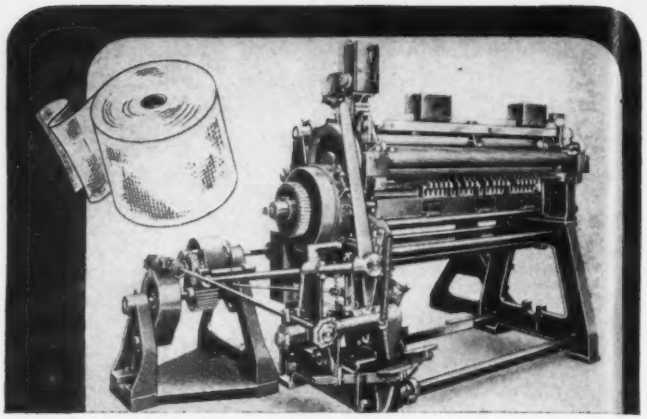

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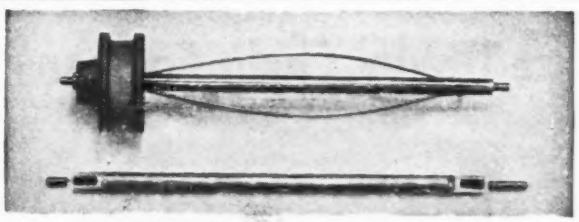

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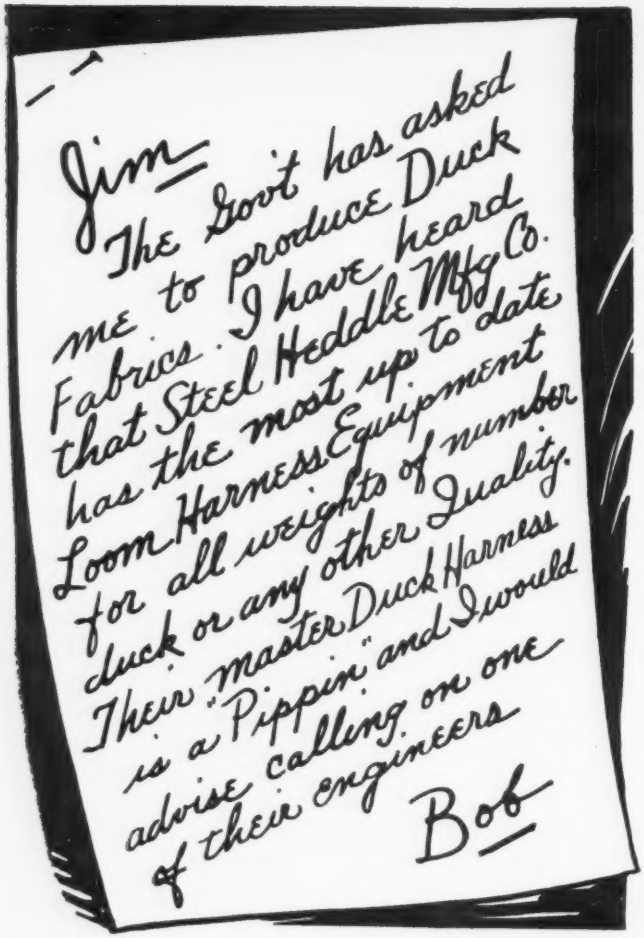
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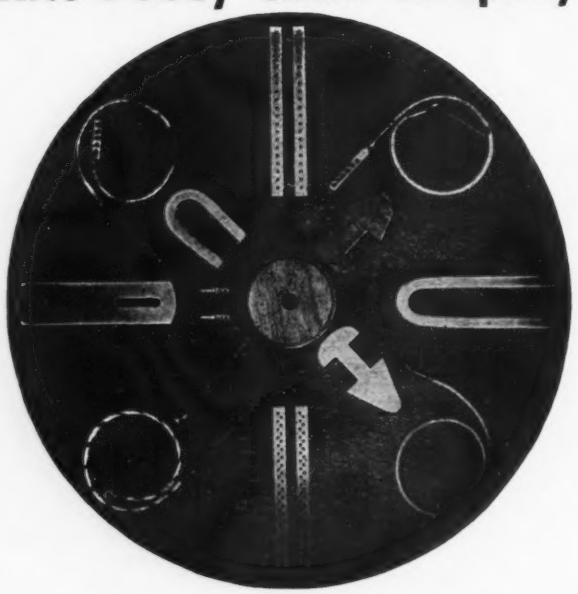

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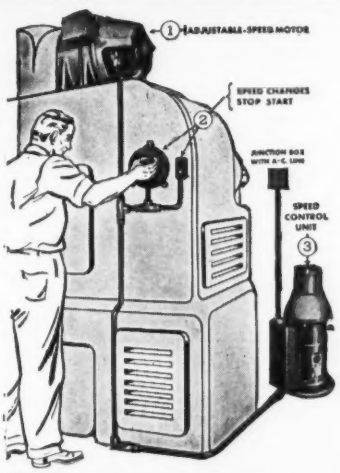

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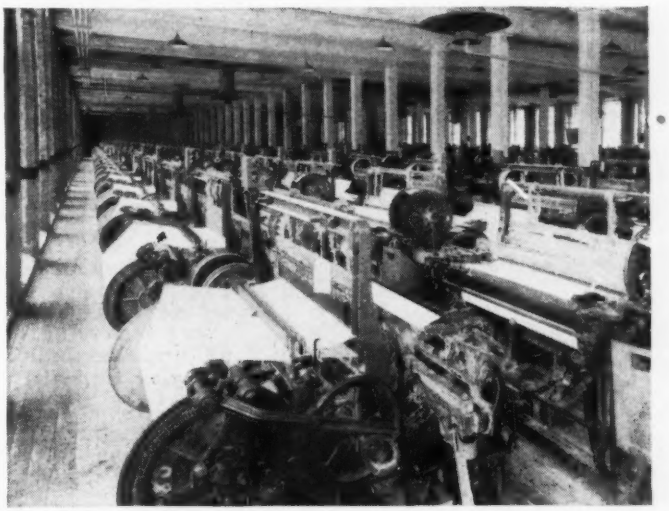

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Floor *with* MFMA Maple
REG. U. S. PAT. OFF.
(NORTHERN HARD)

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Wyandotte

Announcing the consolidation of

MICHIGAN ALKALI COMPANY

THE J. B. FORD COMPANY

into

WYANDOTTE CHEMICALS CORPORATION

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The Michigan Alkali Company grew to be one of the great basic chemical companies of the world, manufacturing a wide range of products serving more than fifty different industries.

The J. B. Ford Company developed into the world's largest manufacturer of specialized cleaning materials, and an important factor in promoting sanitation and safeguarding the health of America.

The company controls warehouse facilities strategically located at approximately 200 points throughout the country.

Consolidation a Logical Step

On January 1, 1943, these companies were consolidated, still under the same family ownership, to form the Wyandotte Chemicals Corporation.

This consolidation is a logical recognition of the close relationship which has existed between the companies for many years.

Management and personnel will remain the same, but the consolidation will offer an opportunity for even greater service to our customers.

Many Benefits to Customers

Wyandotte Chemicals Corporation will continue to have one of the best distribution systems in the United States—making all Wyandotte products more readily available, to smaller as well as larger consumers.

Combining the technical staffs of the two companies will now make it possible to bring a wider range of expert technical service to Michigan Alkali and The J. B. Ford customers everywhere.

The enlarged research laboratories may be counted upon to develop important new products to meet the needs of war and post-war conditions.

And by the complete integration of the ownership of raw material sources and control of manufacturing and distribution *in the one company*, Wyandotte Chemicals Corporation will be able still further to enhance the *quality* and *value* for which Wyandotte products have long been noted.

Contracts and commitments of Michigan Alkali Company and The J. B. Ford Company in force at the end of the year 1942 will be carried out without interruption by the Wyandotte Chemicals Corporation, and customer contacts will be maintained without interruption by the Michigan Alkali Division and the J. B. Ford Division of the consolidated sales departments.

It is our sincere intention to continue to develop and manufacture to the best of our ability products which help the nation in wartime and which will contribute to a fuller life when peace is won.

WYANDOTTE CHEMICALS CORPORATION

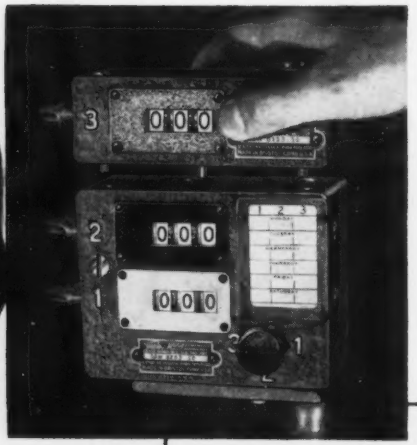
Michigan Alkali and J. B. Ford Divisions

Wyandotte, Michigan

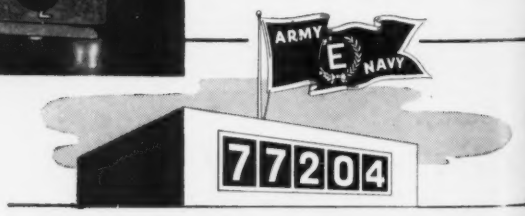
When His Life Hangs by THREADS ..HE COUNTS ON YOU

From parachutes to uniforms to gun-covers, the Arm Forces count on the textile industry for dependable equi ment . . . *which they get.* And the textile industry coun on Veeder-Root for the facts-in-figures that help keep th production up to schedules and specifications . . . as w as simplify payroll make-up and provide a platform parity for wage payment. These Veeder-Root figur continuously and accurately supplied, are indispensab expediters on the biggest job the industry has ever don And if your mill needs closer control of production speed war contracts, then you can count on Veeder-Ro to help you in every possible way.

★ ★ ★



VEEDER-ROOT 2-3 PICK COUNTE are helping thousands of weave ro to roll out millions of yards of lo age of evenly maintained quality. A they provide their own protection aga obsolescence by their quick conve bility, right in the mill, *from 2 3-shift counters (as shown).*



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The Counting House of Industry

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